DOCUMENT RESUME

ED 241 338 SE 044 143

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TITLE Number Activities for Primary Grades.
INSTITUTION Area Education Agency 7, Cedar Falls, IA.
PUB DATE [80]
NOTE 67p.
PUB TYPE Guides - Classroom Use - Materials (For Learner) (051) -- Guides - Classroom Use - Guides (For Teachers) (052)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS *Academically Gifted; Addition; Graphs; Instructional Materials; Learning Activities; *Mathematics Instruction; *Number Concepts; *Numbers; Pattern Recognition; Primary Education; Subtraction; Worksheets
IDENTIFIERS PF Project

ABSTRACT

This booklet offers teacher instructions and student worksheets on number activities for gifted primary grade students. Three sections are included: (1) "moving numbers" which asks students to supply the missing member or members of addition and subtraction equations; (2) "number trails," which involve the completion of number patterns; and (3) "graphing" in which students use graphs to represent numbers of objects and to determine probability. In each section, the initial activities are easy and become increasingly difficult. A brief description of the activities and general suggestions for presenting them precede each section. This booklet was prepared for a specific classroom; therefore, some of the directions are unique to that classroom. This document is part of a collection of materials from the Iowa Area Education Agency 7 Teacher Center project. (DC)

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AREA EDUCATION AGENCY 7

Cedar Falls, Iowa

Document title: Number Activities for Primary Grades

Author(s): Donna Lindeman

Developed with funds provided by a federal Teacher Center grant contract under the provisions of the Higher Education Act of 1965.

AEA 7 Teacher Center
Waterloo, Iowa
Sept. 15, 1978 to Aug. 15, 1983

Teacher Center Policy Board Chair - Doris Mauer
Teacher Center Director - Diane Gibson, Ed. D.

Ronald Dickinson, Ed. D.- Chief Administrator, AEA 7

This booklet contains number activities for first, second and third grade gifted students. Since it was prepared for a specific classroom, that of Donna Lindeman, some of the directions to students are unique to her material. There are three sections in this booklet: moving numbers, number trails, and graphing. In each section the activities begin easy and get increasingly more difficult. A brief description of the activities proceeds each section.

Moving Numbers

For this section it is helpful to have cards numbered from 1 to 9 for the students to use. The first page can be prepared as a master for use by your students. Various numbers can be written in as the sums. The students can then use their number cards to determine combinations which equal the sums. They can then record the combination on the paper. On the four following pages the sums and one number in the combination is given. The students are to determine the other number(s). Following those are two pages where the students are to make number sentences using certain perscribed numbers. On the pages containing hexagons, circles, squares and triangles, the number which goes in the hexagon in the first number sentence in each pair must also go in the hexagon in the second sentence. The same number which goes in the circle in the first sentence must also go in the second.

The two following pages require the students using the numbers 1, 2, 3, 4, 5 and 6 to form the figures with the sums indicated. On the next page the students use the 1 through 9 to form the sums located.

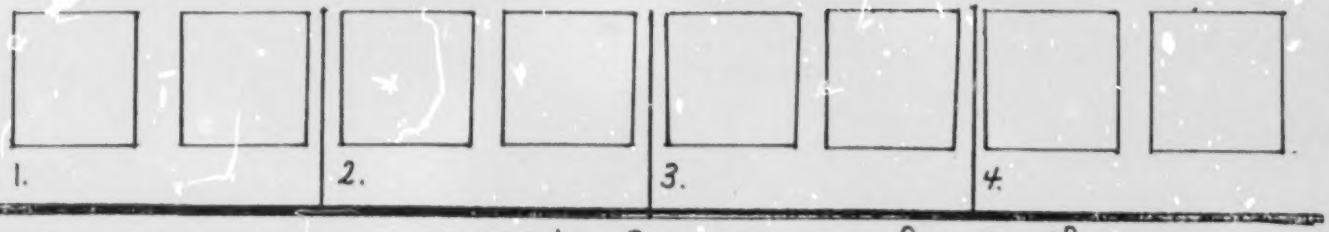
On the page containing the sets of six circles, again the students use the numbers 1 through 6 to make all the sentences both horizontally and vertically, true.

On the next page the students are to use the numbers 10, 11, 12, 13, 14, 15, and 16 to make the numbers along each line add up to 39 in the first figure. In the second figure, use the numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 to make the numbers along each side total 200.

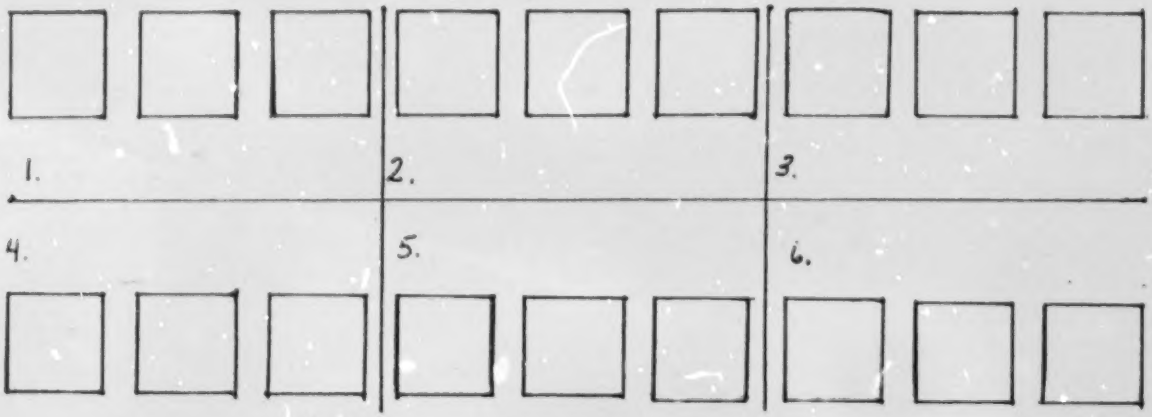
On the last page of the moving number section, students use eight of the nine numbers between 1 and 9 to make all the sentences true.

Name _____

Answer Sheet Task A Sums of ____

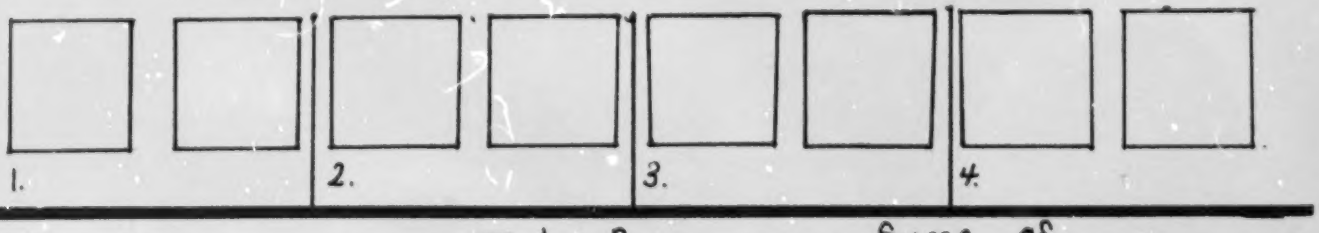


Task B Sums of ____

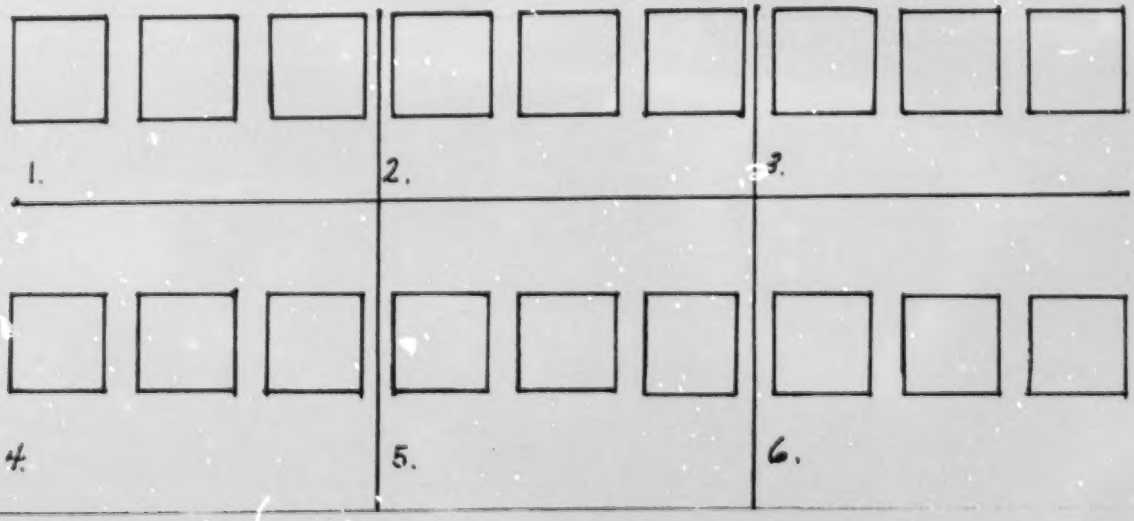


Name _____

Answer Sheet Task A Sums of ____



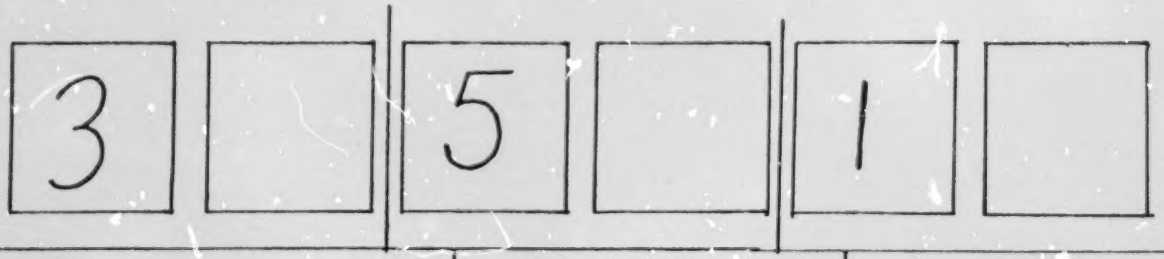
Task B Sums of ____



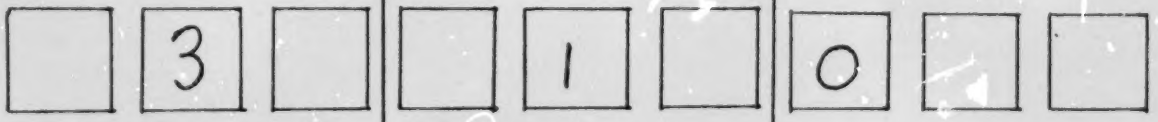
Use numbers: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9

Write numbers in the squares to show the sums.

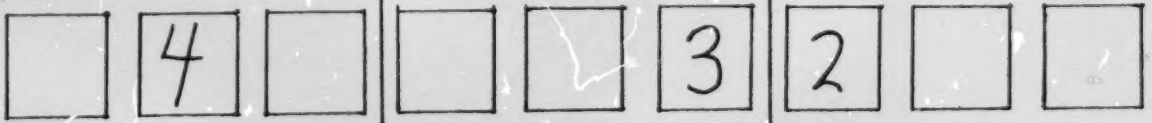
Sum 7



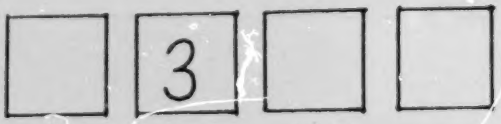
Sum 7

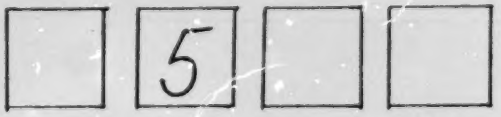


Sum 10



Sum 13

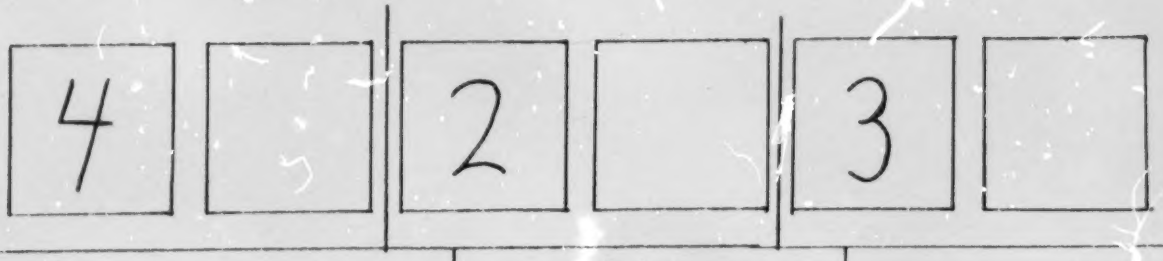




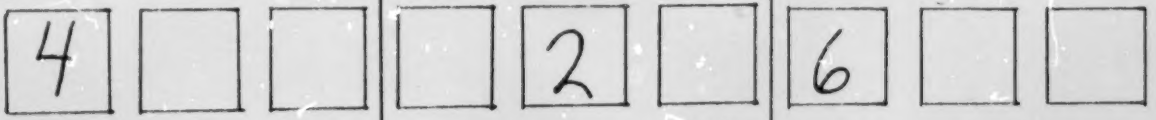
Use numbers: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9

Write numbers in the squares to show the sums.

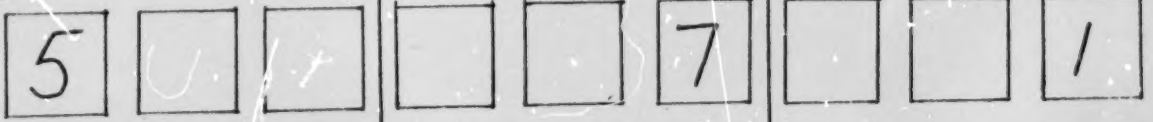
Sum 8



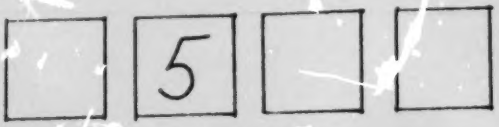
Sum 8

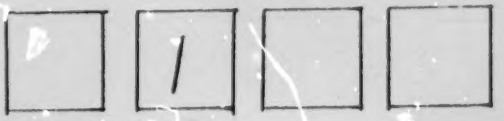


Sum 12



Sum 14

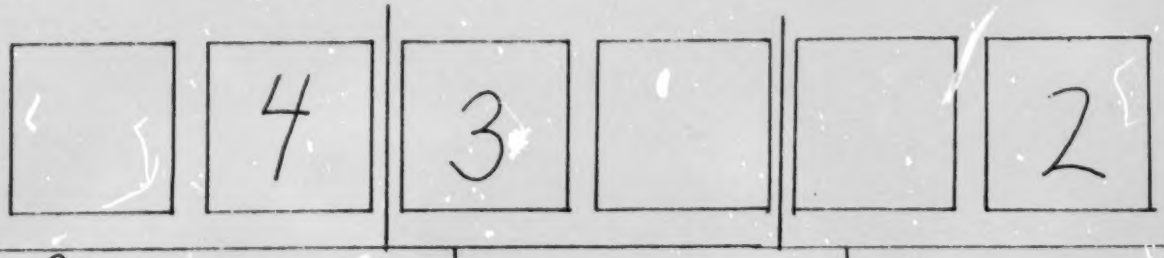




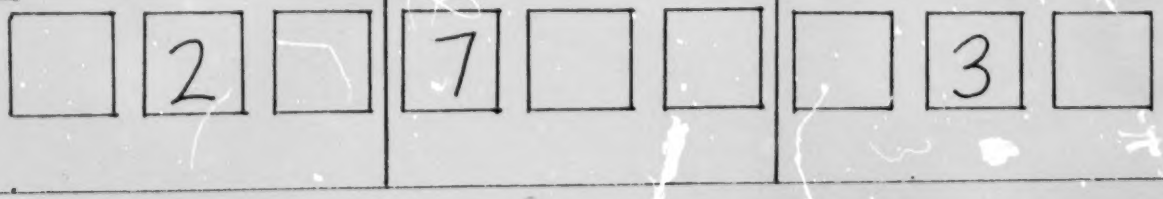
Use numbers: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9

Write numbers in the squares to show the sums.

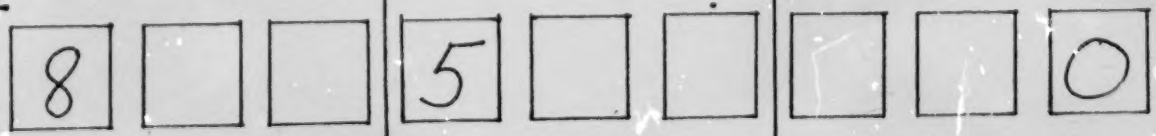
Sum 9



Sum 9



Sum 15

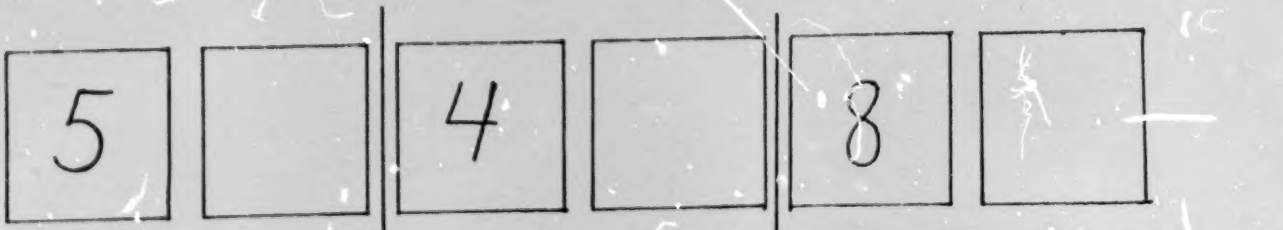


Sum 23

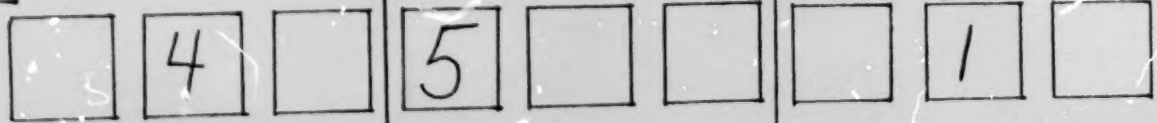
Use numbers: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9

Write numbers in the squares to show the sums.

Sum 11

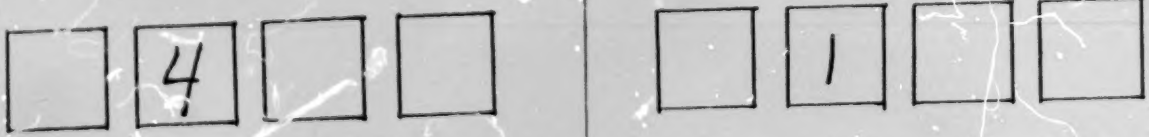


Sum 11



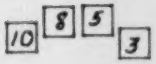
Sum 17

Sum 25



Tile Trial

Complete the sentences. Use any three tiles.

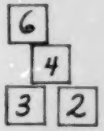


8 - 5 - 3 = 0

1. ☐ - ☐ - ☐ = 2
2. ☐ + ☐ - ☐ = 5
3. ☐ + ☐ - ☐ = 1
4. ☐ + ☐ - ☐ = 3
5. ☐ + ☐ - ☐ = 10
6. ☐ + ☐ - ☐ = 15
7. ☐ - ☐ + ☐ = 8
8. ☐ + ☐ + ☐ =

Tile Trial

Using any three of these tiles, can you complete the following sentences?

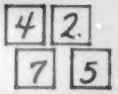


6 + 3 + 2 = 11

1. ☐ - ☐ - ☐ = 0
2. ☐ + ☐ - ☐ = 1
3. ☐ + ☐ - ☐ = 3
4. ☐ + ☐ - ☐ = 4
5. ☐ - ☐ + ☐ = 5
6. ☐ + ☐ - ☐ = 7
7. ☐ + ☐ - ☐ = 8
8. ☐ + ☐ + ☐ = 9

Tile Trial

Complete the sentences. Use any three tiles.

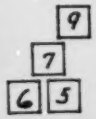


2 + 4 + 7 = 13

1. ☐ - ☐ - ☐ = 0
2. ☐ - ☐ - ☐ = 1
3. ☐ + ☐ - ☐ = 3
4. ☐ - ☐ + ☐ = 7
5. ☐ + ☐ - ☐ = 10
6. ☐ + ☐ - ☐ = 8
7. ☐ + ☐ + ☐ = 11
8. ☐ + ☐ - ☐ = 4

Tile Trial

Complete the sentences. Use any three tiles.

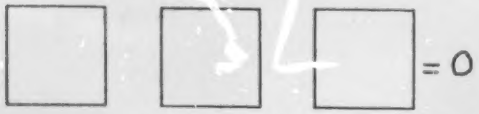


7 + 6 + 5 = 18

1. ☐ + ☐ - ☐ = 2
2. ☐ - ☐ + ☐ = 10
3. ☐ - ☐ + ☐ = 8
4. ☐ + ☐ - ☐ = 4
5. ☐ + ☐ - ☐ = 7
6. ☐ + ☐ - ☐ = 10
7. ☐ - ☐ + ☐ = 6
8. ☐ + ☐ + ☐ = 22

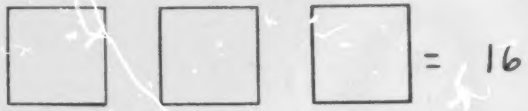
More Tile Trials

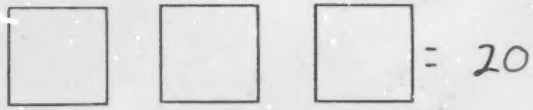
Use the numbers 3, 5, 12, or 15. You need to put the numbers in the squares and then put + or − signs between the squares to make the sentences true.



More Tile Trials

Use the numbers 6, 7, 11, or 15. You need to put the numbers in the squares and then put + or − signs between the squares to make the sentences true.





Name _____

- Lay numerals on ⬡ and ○ on the folder to think about your answers.
- Write answers on this page.

⬡ + ○ = 5	⬡ + ○ = 10
⬡ - ○ = 3	⬡ - ○ = 2
⬡ + ○ = 6	⬡ + ○ = 9
⬡ - ○ = 4	⬡ - ○ = 3
⬡ + ○ = 7	⬡ + ○ = 7
⬡ - ○ = 3	⬡ - ○ = 1
⬡ + ○ = 8	⬡ + ○ = 9
⬡ - ○ = 4	⬡ - ○ = 5

Name _____

Lay numerals on ⬡ and ○ on the folder to think about your answers. Write answers on this page.

⬡ + ○ = 7	⬡ + ○ = 8
⬡ − ○ = 5	⬡ − ○ = 6
⬡ + ○ = 11	⬡ + ○ = 13
⬡ − ○ = 9	⬡ − ○ = 7
⬡ + ○ = 10	⬡ + ○ = 12
⬡ − ○ = 6	⬡ − ○ = 4
⬡ + ○ = 11	⬡ + ○ = 9
⬡ − ○ = 7	⬡ − ○ = 7

Name _____

Lay numerals on ○ and ⬡ on the folder to think about your answers.

Write answers on this page.

○ − ⬡ = △ 8

11 + ⬡ = □

□
− △
6

○ − ⬡ = △

7 + ⬡ = □

□
− △
10

○ − ⬡ 6 = △

○ + ⬡ = □

□
− △
12

○ − ⬡ = △

○ + ⬡ = 12

□
− △
6

Name _____

Lay numerals on ○ and ⬡ on the folder to think about your answers. Write answers on this page.

○ − 4 = △

○ + ⬡ = 10

△ + □ = 12

---

4 − ⬡ = △

○ + ⬡ = □

△ + □ = 8

○ − ⬡ = 1

○ + ⬡ = □

△ + □ = 16

○ − ⬡ = △

9 + ⬡ = □

△ + □ = 18

Name _____

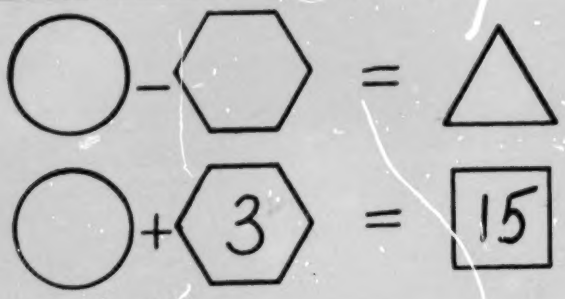
Lay numerals on ⬡ and ○ on the folder to think about your answers.

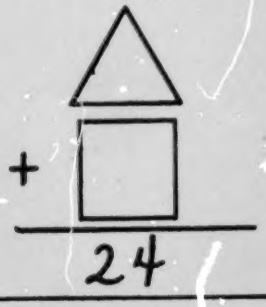
Write answers on this page.

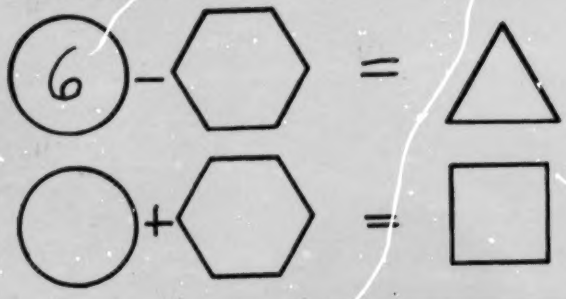
⬡ + ○ = 11	⬡ + ○ = 12
⬡ - ○ = 1	⬡ - ○ = 8
⬡ + ○ = 15	⬡ + ○ = 15
⬡ - ○ = 5	⬡ - ○ = 9
⬡ + ○ = 12	⬡ + ○ = 12
⬡ - ○ = 10	⬡ - ○ = 6
⬡ + ○ = 15	⬡ + ○ = 13
⬡ - ○ = 7	⬡ - ○ = 1

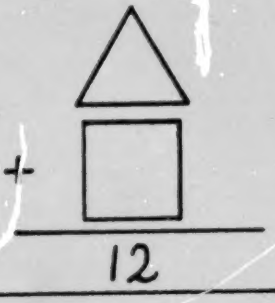
Name _____

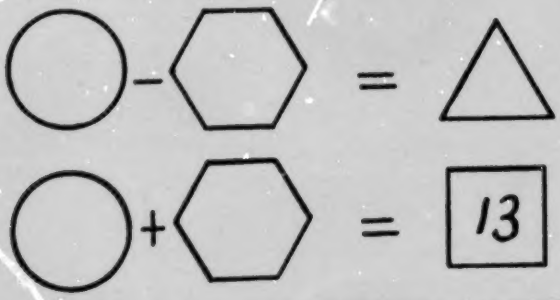
Lay numerals on ○ and ⬡ on the folder to think about your answers.
Write answers on this page.

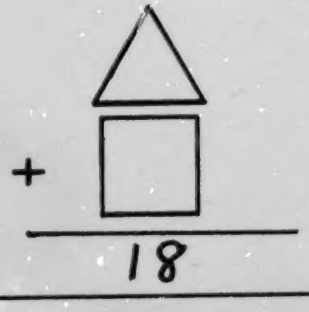


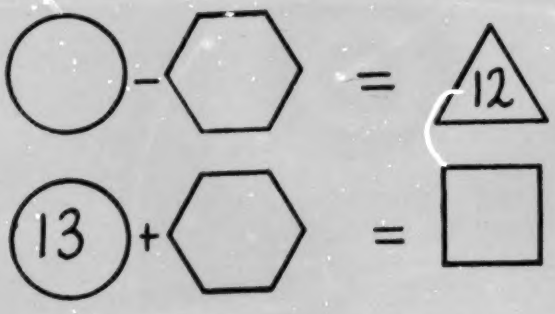


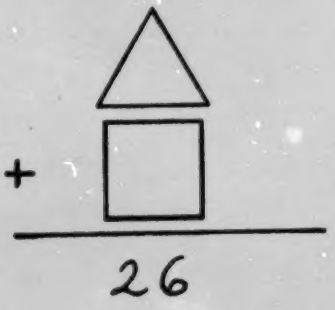












Name _____

Lay numerals on ○ and ⬡ on the folder to think about your answers.

Write answers on this page.

---

13 − ⬡ = △

○ + ⬡ = 15

□ − △ = 4

○ − 3 = △

○ + ⬡ = □

□ − △ = 4

6

○ − ⬡ = △

○ + ⬡ = 13

□ − △ = 4

○ − ⬡ = △

9 + ⬡ = □

□ − △ = 12

Name _____

Lay numerals on ⬡ and ○ on the folder to think about your answers. Write answers on this page.

⬡ + ○ = 8	⬡ + ○ = 14
⬡ − ○ = 2	⬡ − ○ = 6
⬡ + ○ = 11	⬡ + ○ = 15
⬡ − ○ = 5	⬡ − ○ = 1
⬡ + ○ = 15	⬡ + ○ = 14
⬡ − ○ = 13	⬡ − ○ = 10
⬡ + ○ = 13	⬡ + ○ = 9
⬡ − ○ = 3	⬡ − ○ = 5

Name _____

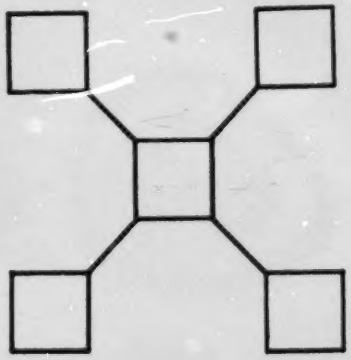
Lay numerals on ⬡ and ○ on the folder to think about your answers. Write answers on this page.

⬡ + ○ = 10	⬡ + ○ = 15
⬡ − ○ = △ 8	⬡ − ○ = △ 11
⬡ + ○ = 15	⬡ + ○ = 10
⬡ − ○ = △ 3	⬡ − ○ = △ 4
⬡ + ○ = 13	⬡ + ○ = 11
⬡ − ○ = △ 9	⬡ − ○ = △ 3
⬡ + ○ = 14	⬡ + ○ = 14
⬡ − ○ = △ 2	⬡ − ○ = △ 4

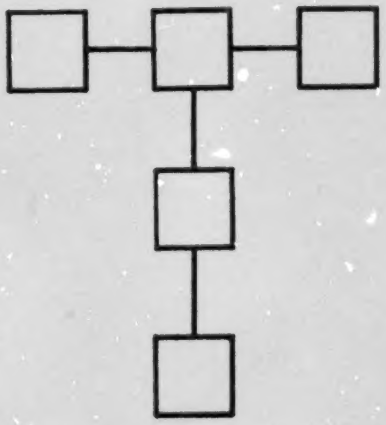
Name _____

- The numbers along each heavy line should make the "Magic Sum."
- Build the model on the next page.
- Write your answers on the answer sheet.

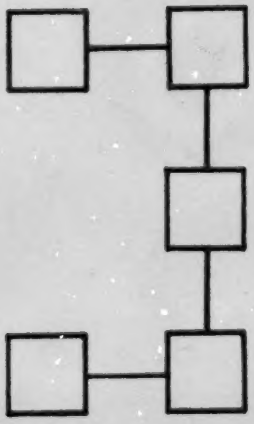
Make 9



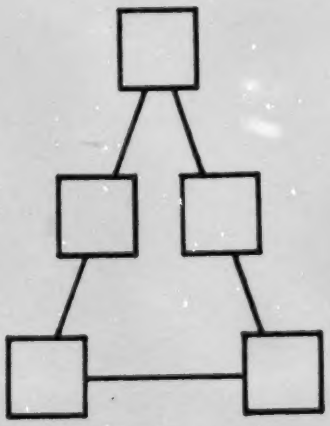
Make 10



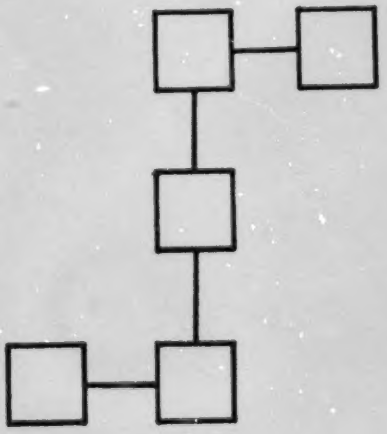
Make 8



Make 6



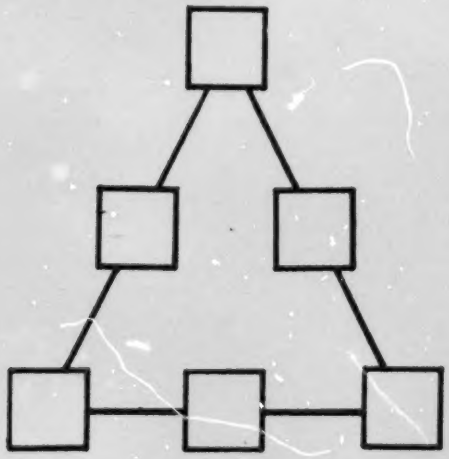
Make 8



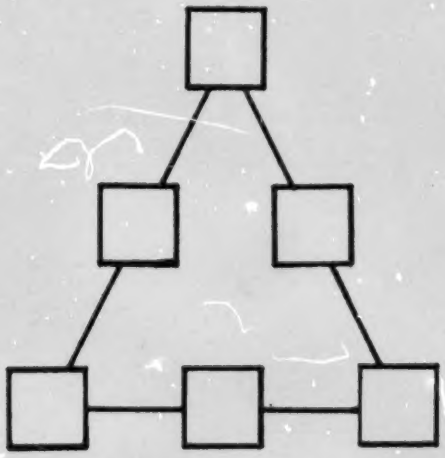
Make 7

Name _____

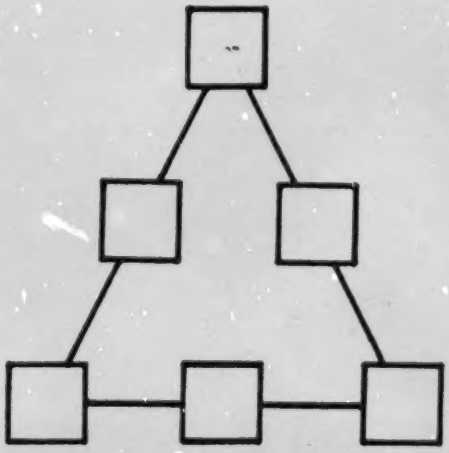
- The numbers along each heavy line should make the "Magic Sum."
- Build the model on the next page.
- Write your answers on the answer sheet.



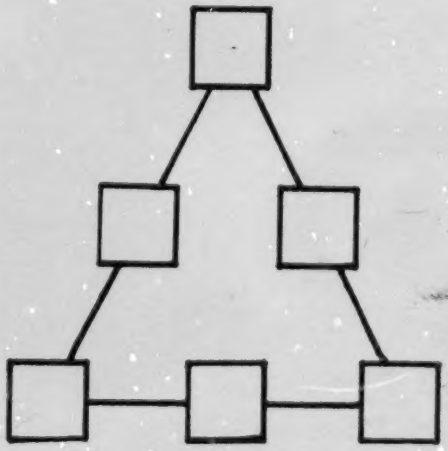
Make 9



Make 10



Make 11

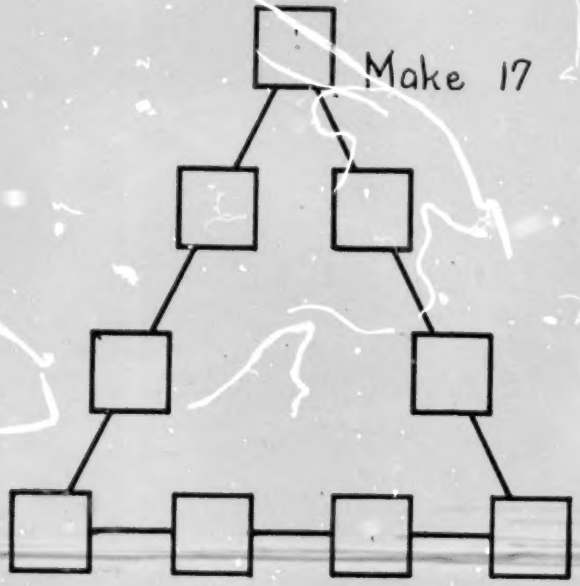


Make 12

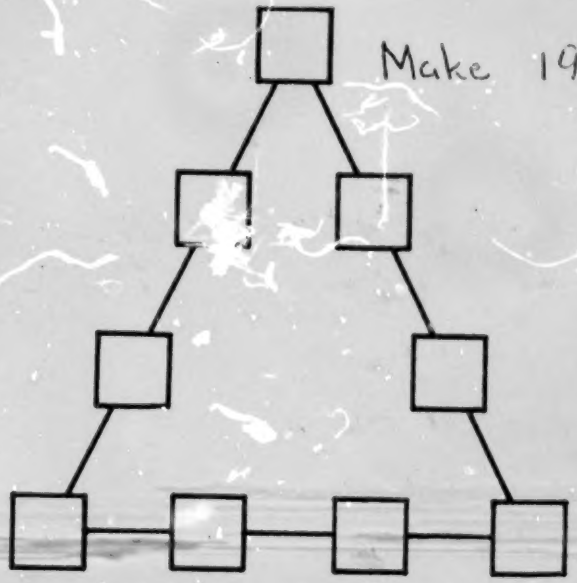
Name _____

- The numbers along each heavy line should make the "Magic Sum."
- Build the model on the next page.
- Write your answers on the answer sheet.

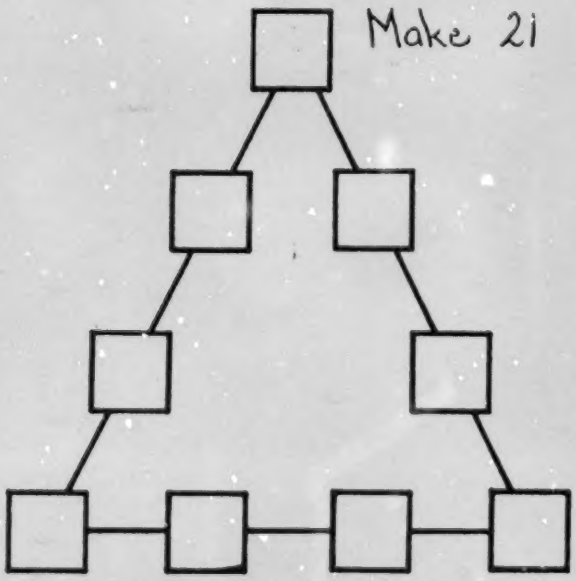
Make 17



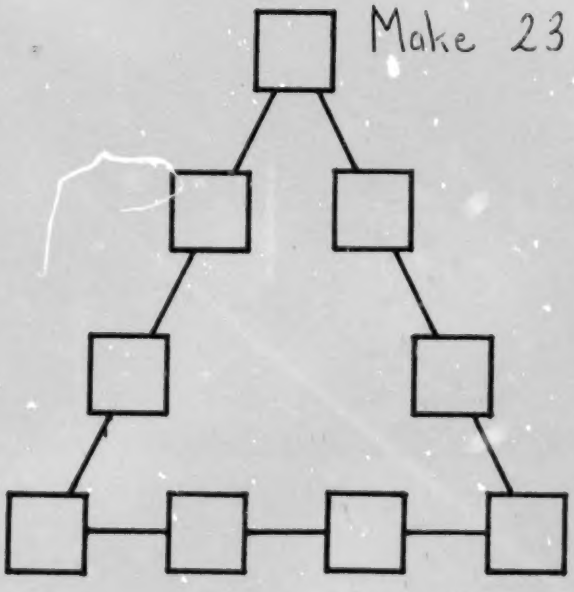
Make 19

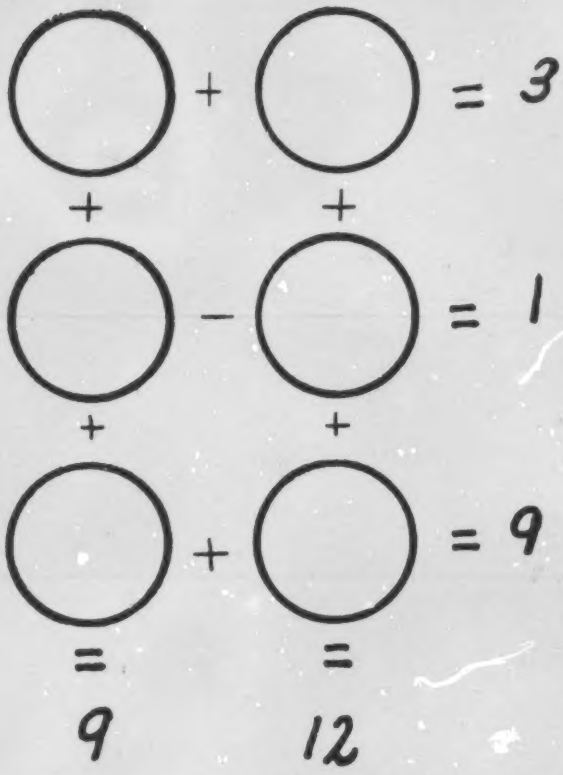


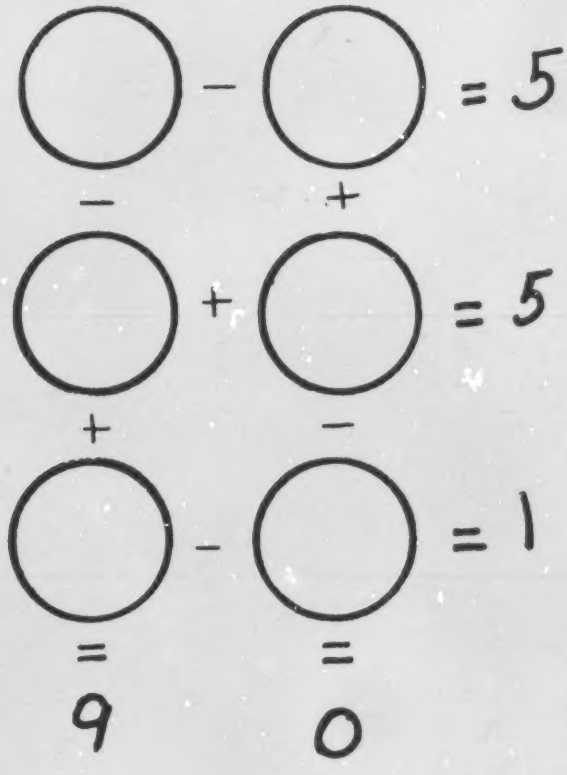
Make 21

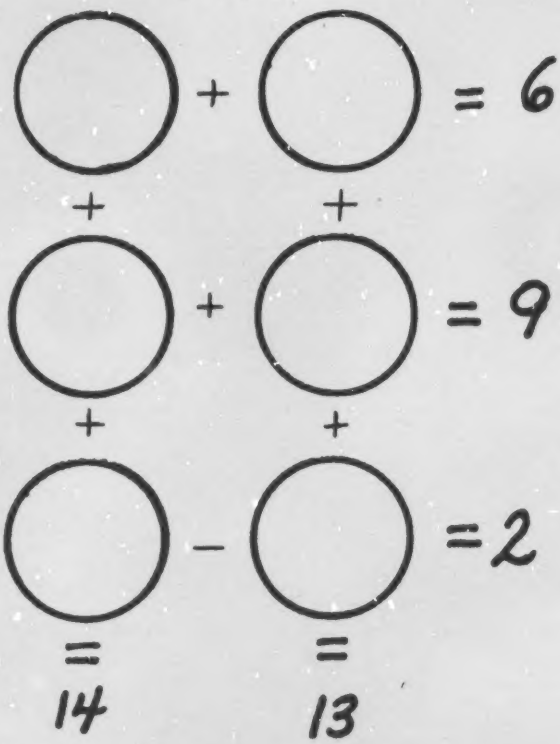


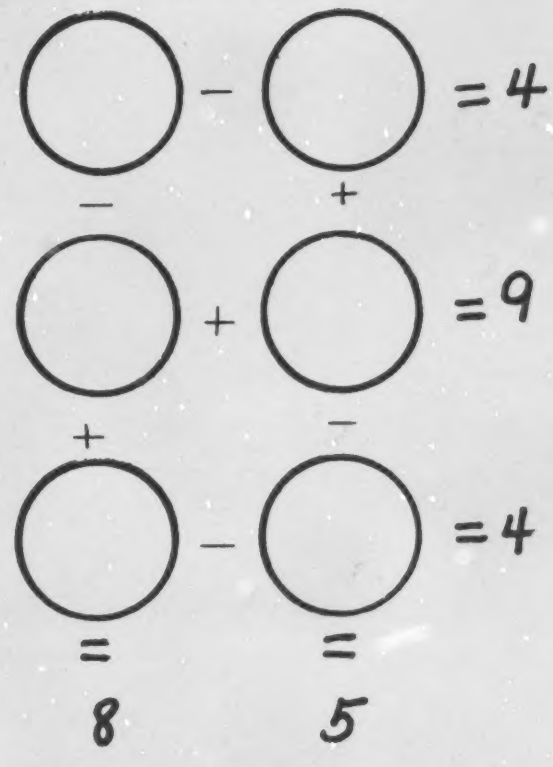
Make 23



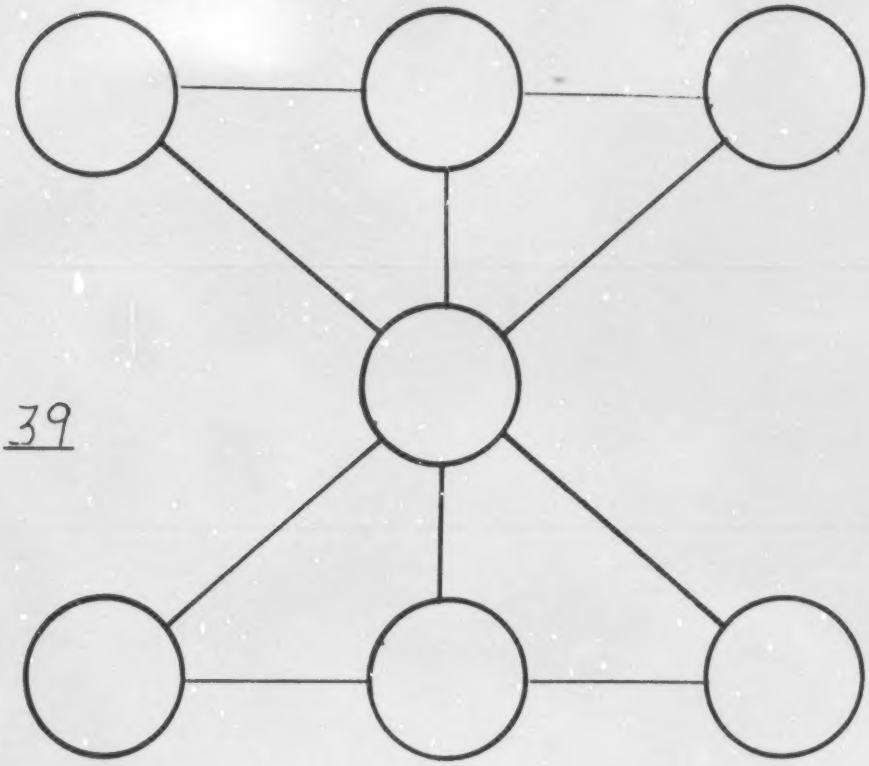

+ = 3
+ +
− = 1
+ +
+ = 9
= =
9 12


− = 5
− +
+ = 5
+ −
− = 1
= =
9 0

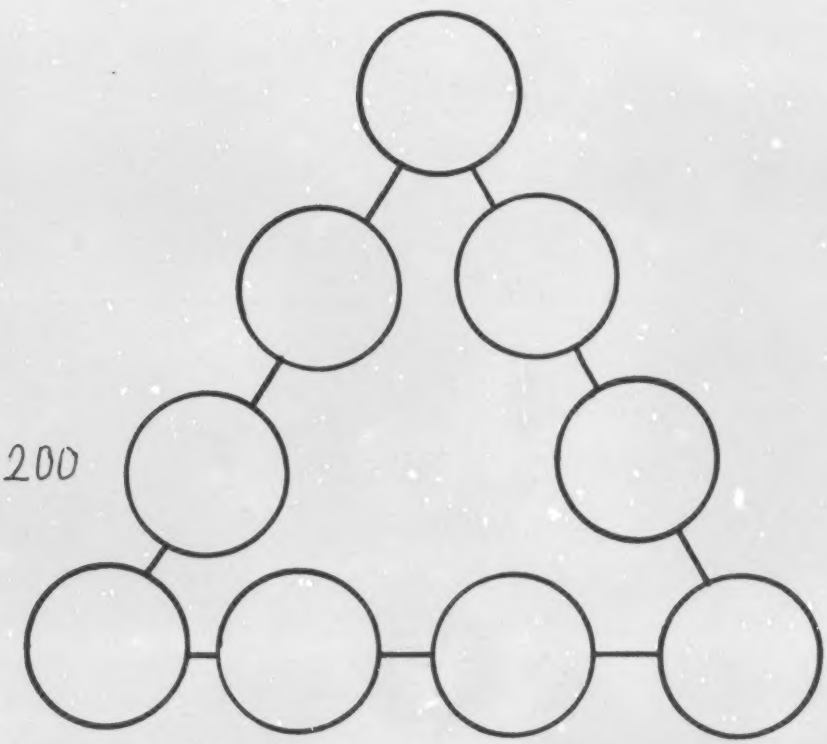

+ = 6
+ +
+ = 9
+ +
− = 2
= =
14 13

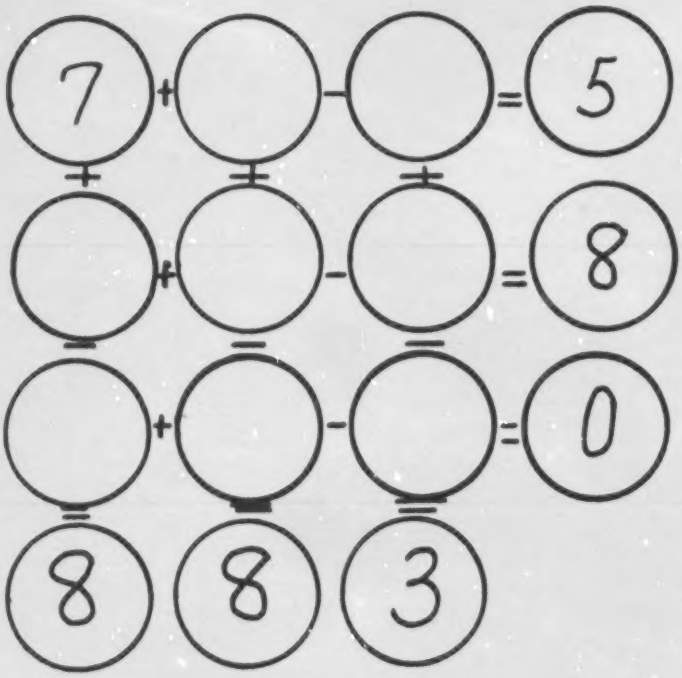

− = 4
− +
+ = 9
+ −
− = 4
= =
8 5

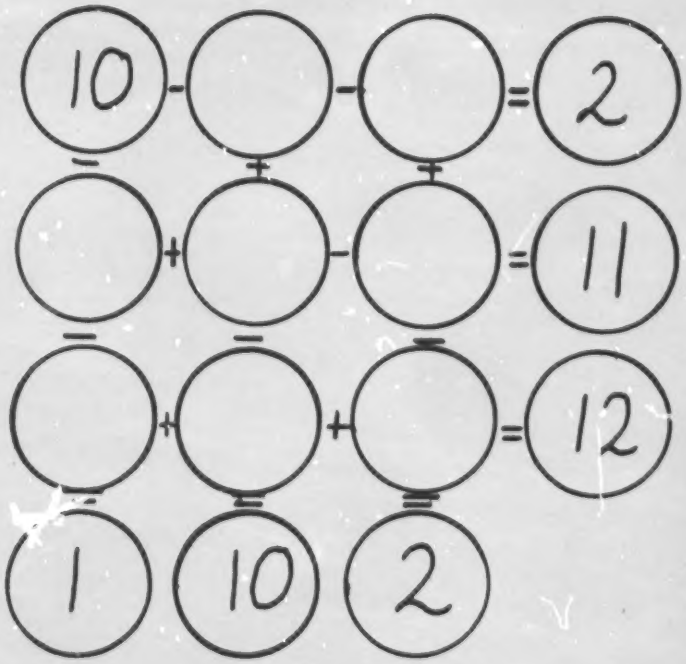
Make 39



Make 200




7
5
8
0
8
8
3


10
2
11
12
1
10
2

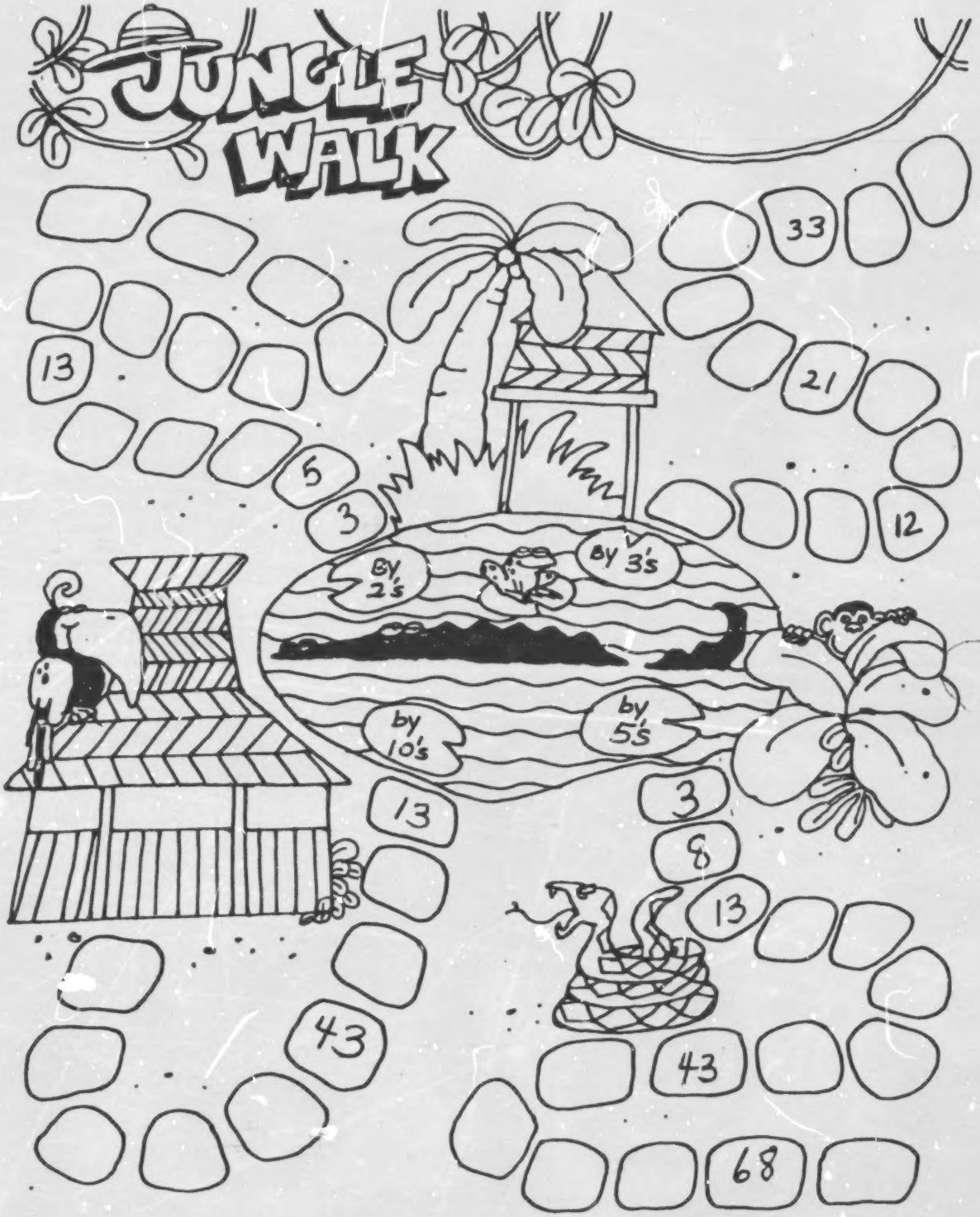
Number Trails

On the first five pages of this section the students are to determine the proper sequence on the trails and then fill in the correct numbers. The next three are double dot-to-dot puzzles with two different pictures in each one.

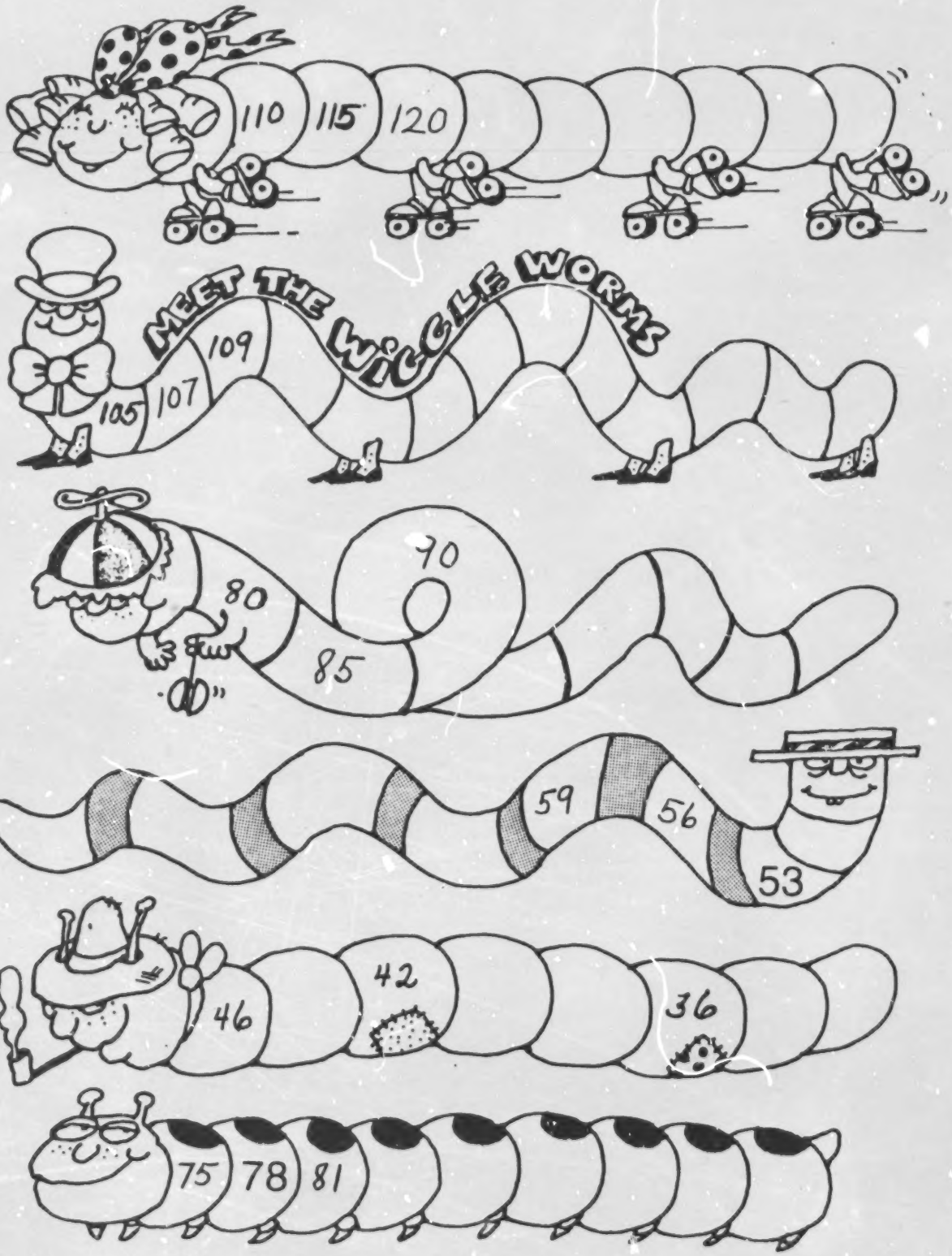
The final ten pages use the 100's board for the basic of the activities.

To make the pages even more difficult, after the students are familar with the 100's board, have them complete the pages without referring to it.

Complete the paths.



Can you complete
their crazy patterns?



EAGER BEAVER

Complete the pattern.
Check your answers.

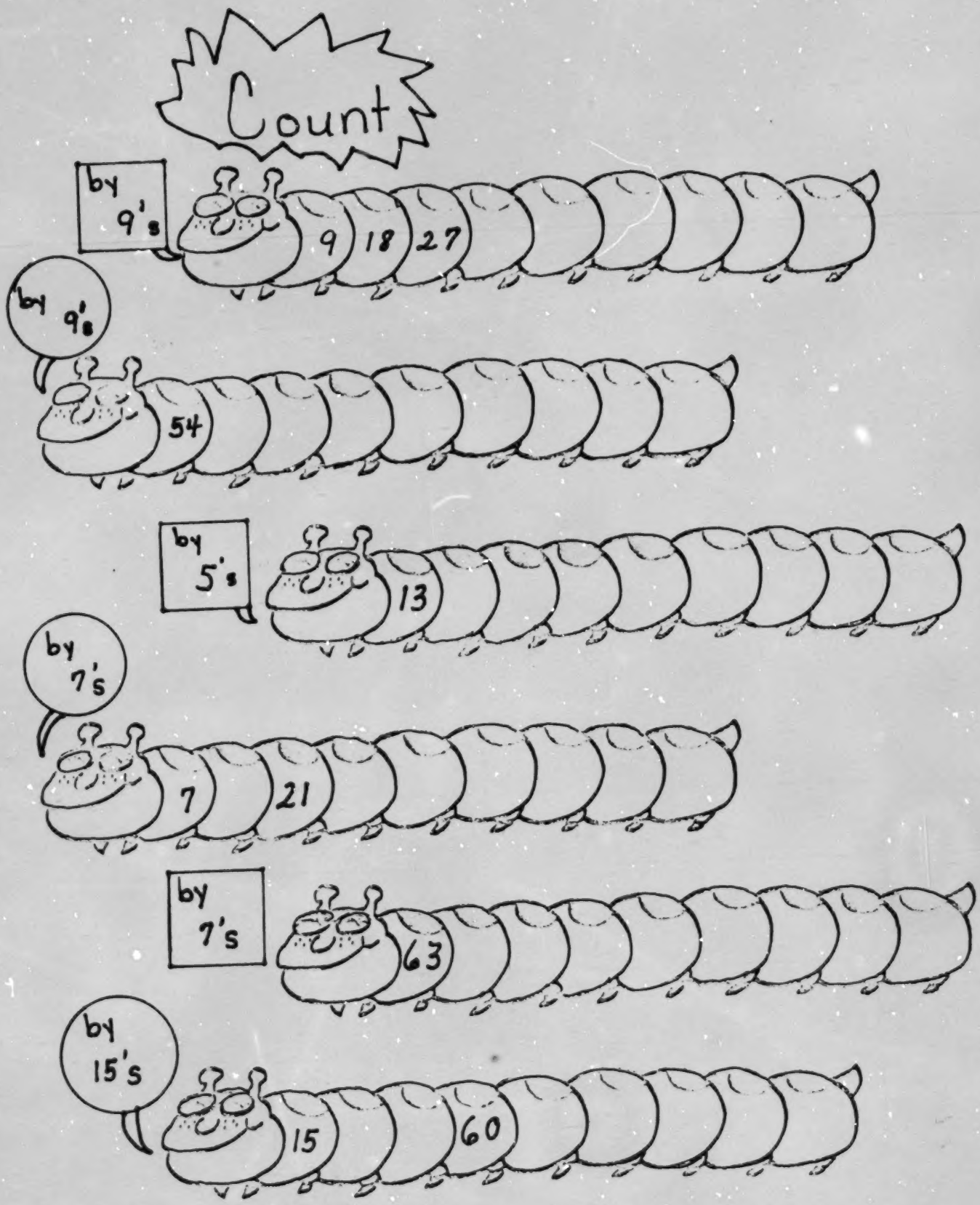
177 180 183

204

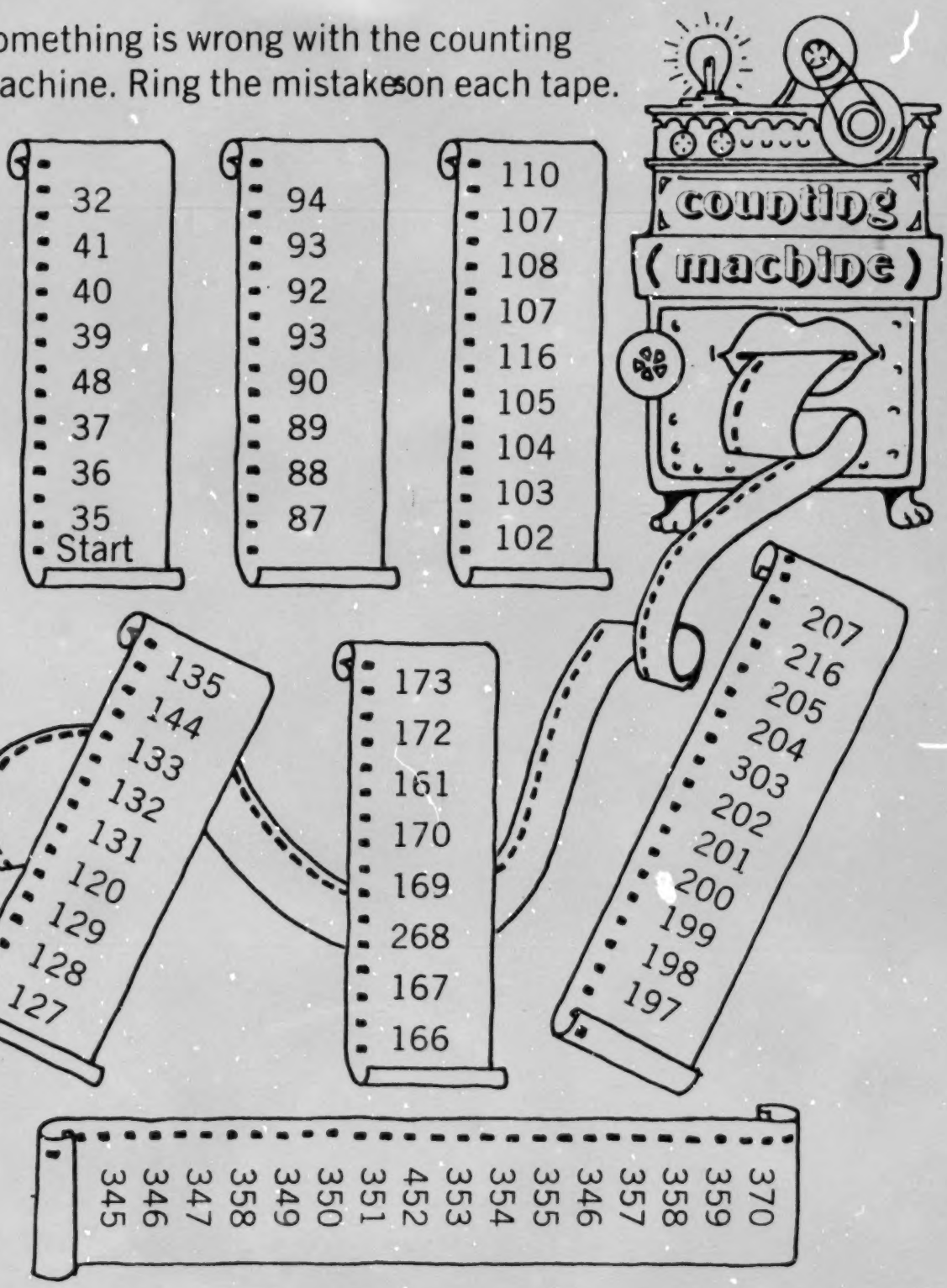
219

243

You made it !!


Count
by 9's
9
18
27
by 9's
54
by 5's
13
by 7's
7
21
by 7's
63
by 15's
15
60

Something is wrong with the counting machine. Ring the mistakes on each tape.



Task A:
Start on (354) - Count by 3's

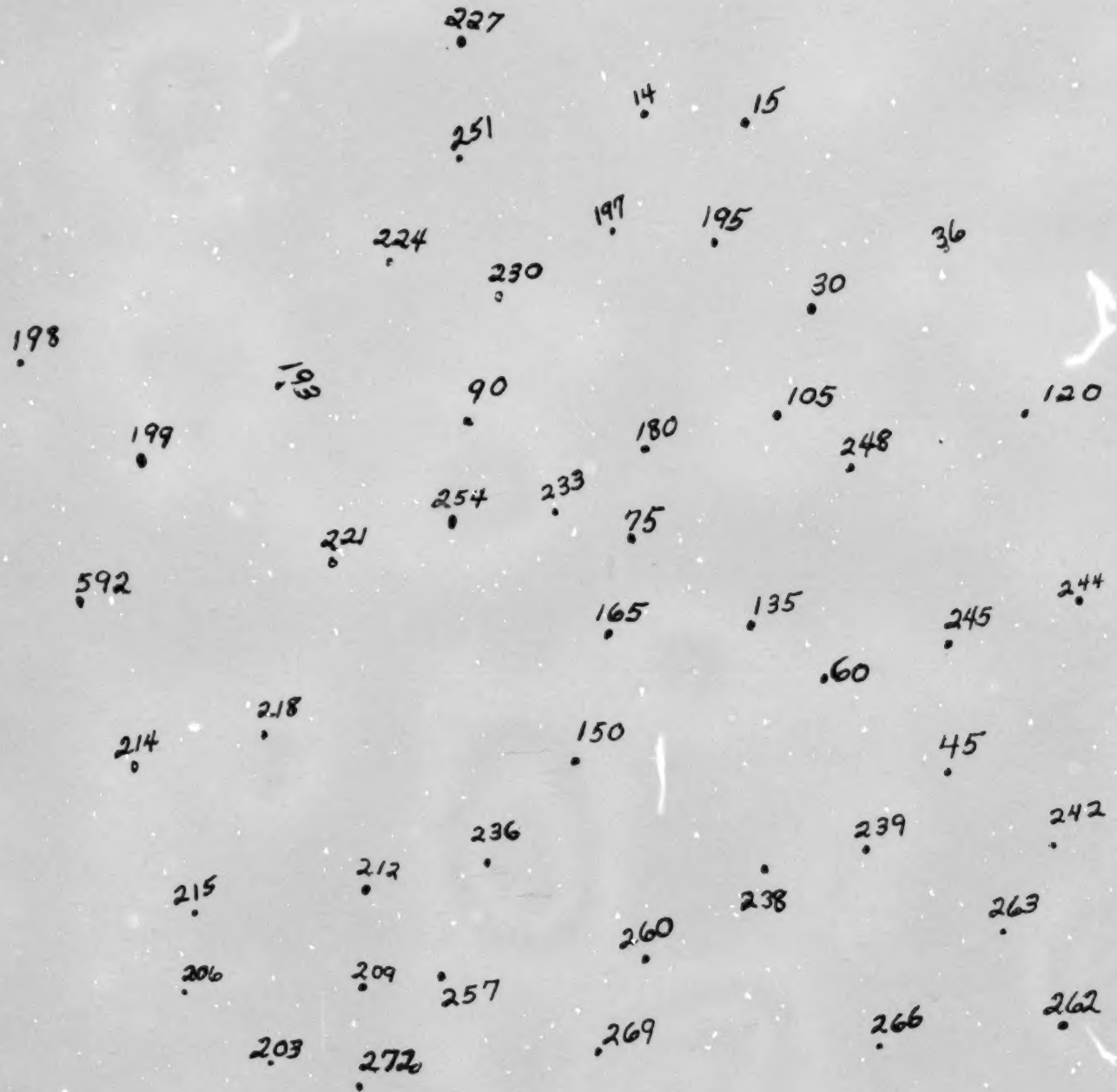
Task B:
Start on (18) - Count by 9's

Task A- Start on (207) - Count by 7's.

Task B- Start on (6) - Count by 5's.

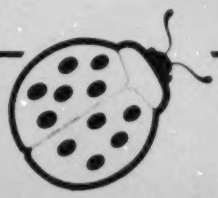
Task A: Start on (203) Count by 3's.

Task B: Start on (15) Count by 15's.



Use The Hundred Square

Start On	Move	Stop On	Sentence
16	→	___	16 + 1 = ___
74	→ →	___	74 + 2 = ___
47	←	___	47 - 1 = ___
30	← ←	___	30 - 2 = ___
81	→ → →	___	81 + 3 = ___
55	← ← ←	___	55 - ___ = ___
22	←	___	___ - ___ = ___
63	← ←	___	___ - ___ = ___
2	→ → →	___	___ + ___ = ___
17	→ →	___	___ + ___ = ___



Use the answer strip to check your work.

Use the Hundred Square

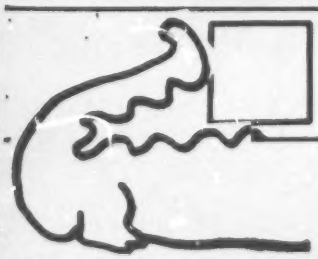
Start On	Move	Stop On	Sentence
45	↑	____	45 - 10 = ___
16	↓	____	16 + 10 = ___
33	↓ ↓	____	33 + 20 = ___
69	↑ ↑	____	69 - 20 = ___
24	↑	____	24 - ___ = ___
10	↓ ↓ ↓	____	10 + ___ = ___
97	↑ ↑ ↑	____	97 - ___ = ___
52	↑ ↑	____	52 - ___ = ___
78	↓ ↓	____	___ + ___ = ___
81	↑ ↑ ↑	____	___ - ___ = ___
43	↓	____	___ + ___ = ___

Check your work.

Start On		Stop	Sentence
67	↓ →	___	67 + 11 = 78
73	↓ ↓ → →	___	73 + 22 = 95
54	↑ ↑ ← ←	___	___ ___ = ___
99	↑ ↑ ↓ ← ← →	___	___ ___ = ___
83	↗	___	___ ___ = ___
5	↘ ↘ ↘	___	___ ___ = ___
26	↗ →	___	___ ___ = ___
42	↙ ←	___	___ ___ = ___
31	↗ ↑	___	___ ___ = ___
50	← ↑ ↙ ↘ ↓ ↖ ↗ →	___	___ ___ = ___

Use the hundred chart to solve the problems

Start On			
6	↓ ↓ → →	=	28
	↓ → →	=	37
	↑ ↓ → →	=	74
	← ↑ ↓ →	=	44
	↓ → ↓ →	=	25
	↑ ← ↑ ↑	=	65
	↓ ↑ ↓ ↓ ↓	=	100
	→ ← ↑ ↑ →	=	47
	→ → ↓ ↓ →	=	36
	→ ↗ ↓ ↓ →	=	40
	↙ ↙ ↑ ↑ ←	=	7



Check your answers.

What Do The Moves Mean?

→	=	⊕	1
→ →	=	⊕	2
←	=	⊖	1
← ←	=	⊖	2
↓	=	⊕	
↓ ↓	=	○	
↑ ↑	=	○	
→ ←	=		
↓ ↑	=		
↓ →	=	⊕	
↓ ←	=	⊕	

What Do The Moves Mean?

↑→	=	⊖ 9
↑←	=	⊖
↗	=	⊖
↘	=	⊕
↑	=	○
↙	=	○
↘↘	=	○
↙↙	=	○
↗↙	=	
↗↘	=	○
↑↙	=	○

Task A

Solve The Arrow Problems

Go in three arrows from [32] to [35].

[32] ⟶ ⟶ ⟶ = [35]

Go in two arrows from [46] to [28].

☐ _____ = [28]

Go in two arrows from [63] to [74].

☐ _____ = [74]

Go in four arrows from [17] to [29].

☐ _____ = [29]

Check your answers on the 100 chart.

Name _____

Go in five arrows [100] to [86].

100 _____ = 86

Go in two arrows [74] to [66].

74 _____ = 66

Go in three arrows [82] to [82].

82 _____ = 82

Go in four arrows [26] to [19].

26 _____ = 19

Go in four arrows [21] to [53].

21 _____ = 53

Go in five arrows [12] to [67].

12 _____ = 67

Name _____

Go in ____ arrows [ ] to [ ].

[ ] _____ = [ ]

Go in ____ arrows [ ] to [ ].

[ ] _____ = [ ]

Go in ____ arrows [ ] to [ ].

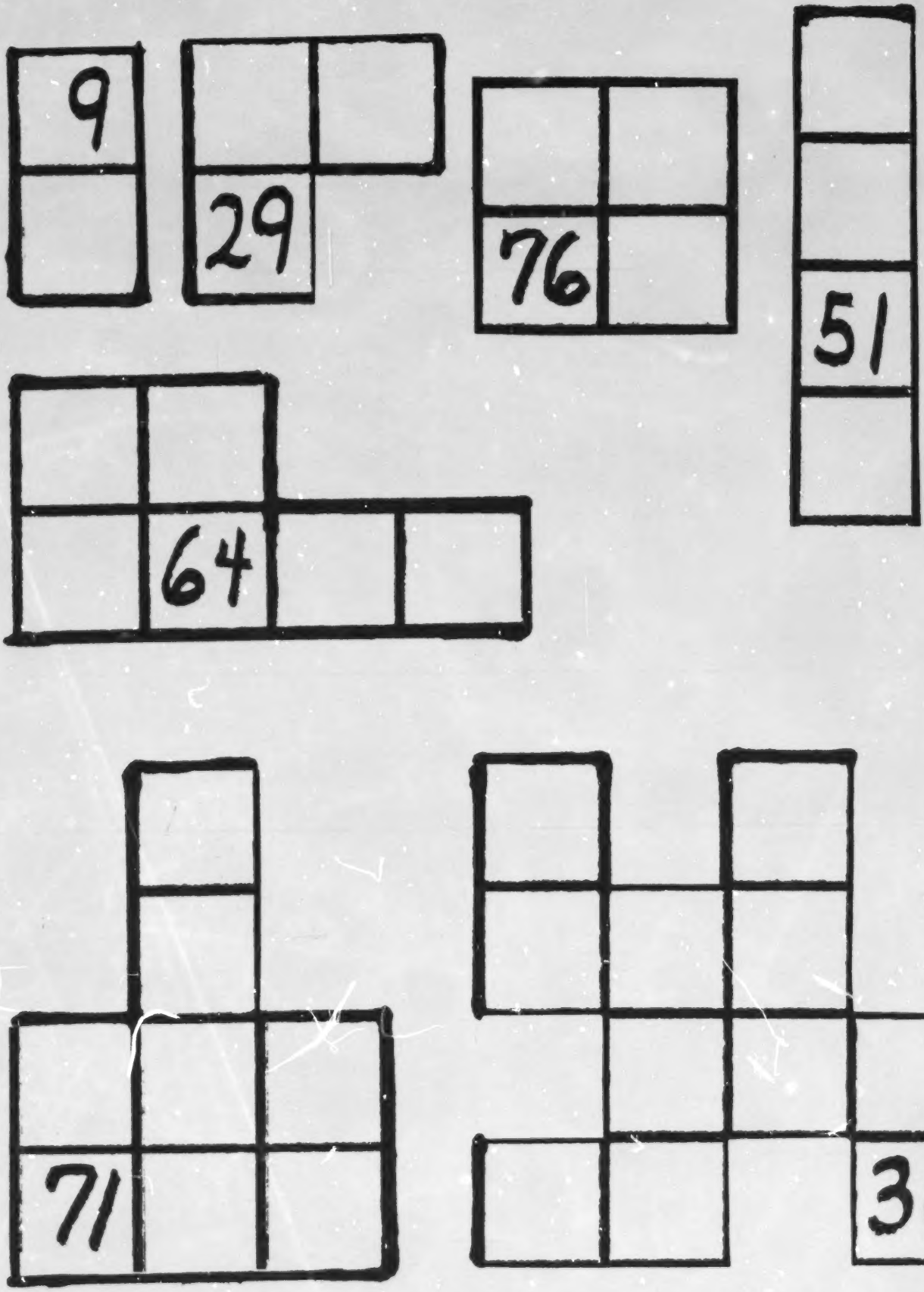
[ ] _____ = [ ]

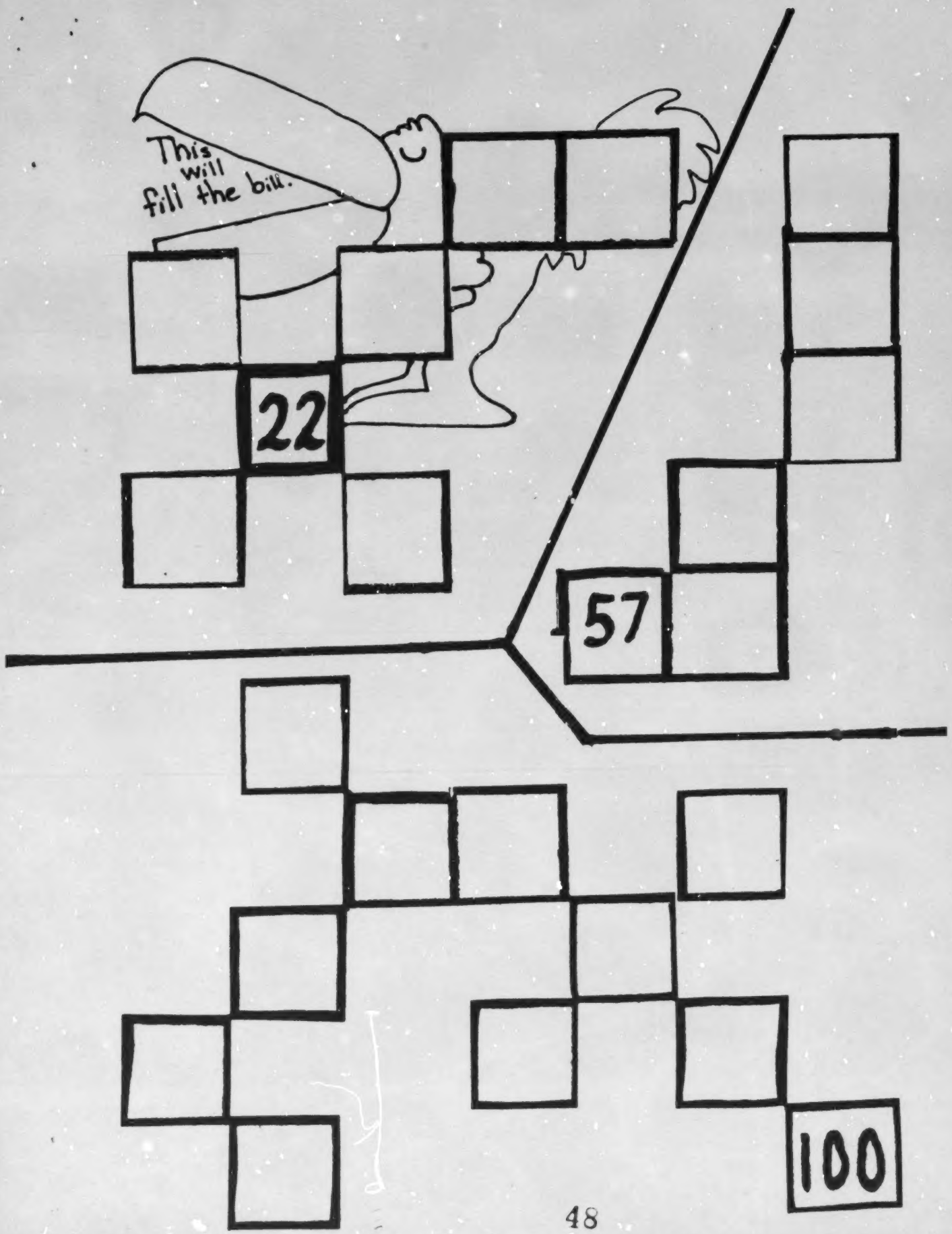
Go in ____ arrows [ ] to [ ].

[ ] _____ = [ ]

Go in ____ arrows [ ] to [ ].

[ ] _____ = [ ]


9
29
76
51
64
71
36


This will fill the bill.
22
57
100

Graphing

On the first three graphs of this section, the students are to count the required objects and then use the included graph paper to graph the count.

For the two grab bag activities the teacher will need to have a bag with some squares, rectangles, triangles and circles (in the 2nd) in them. The students then draw shapes out of the bag and graph the results.

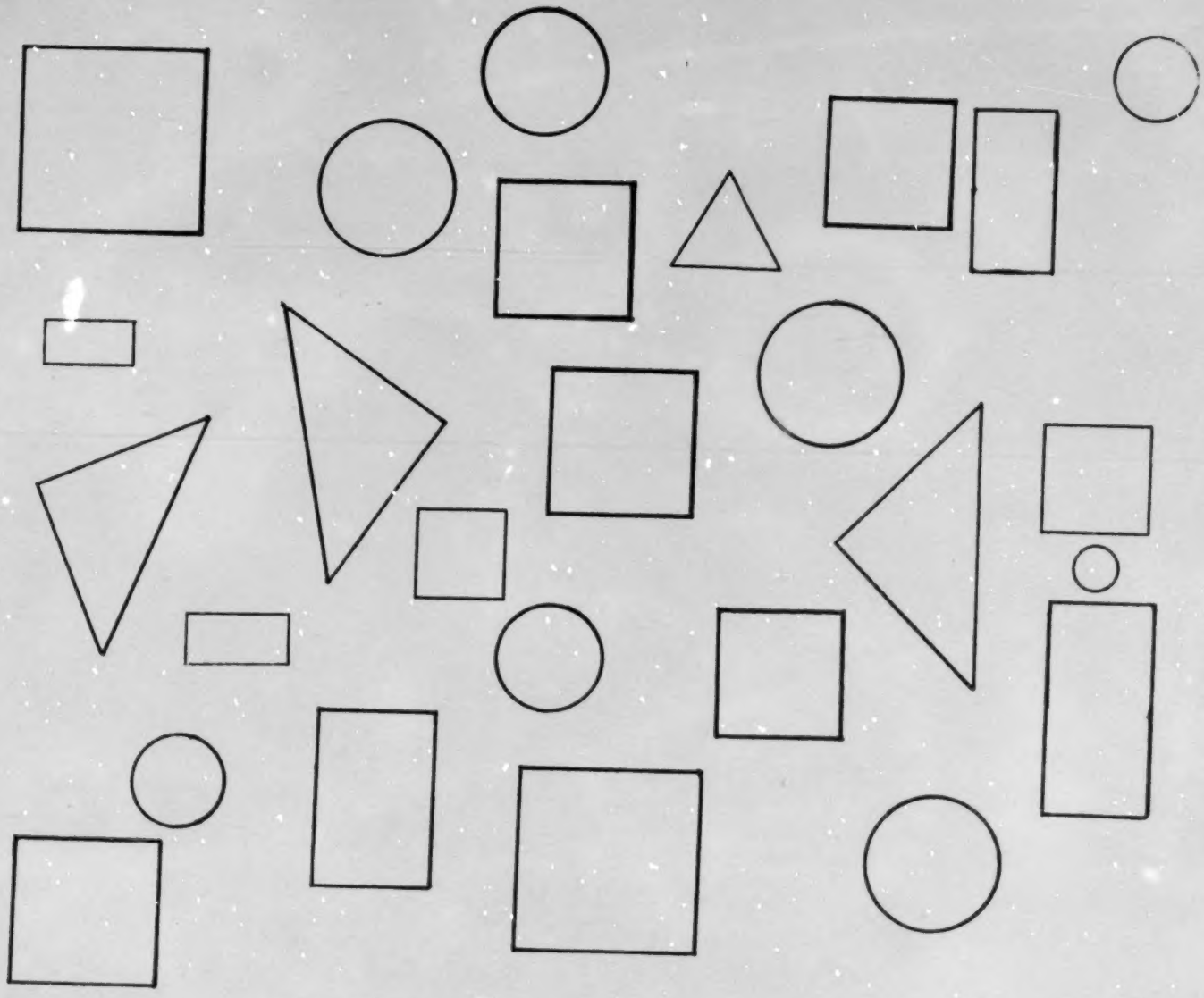
The next two activities involve flipping a coin or a token and rolling a dice. The results are recorded as they occur.

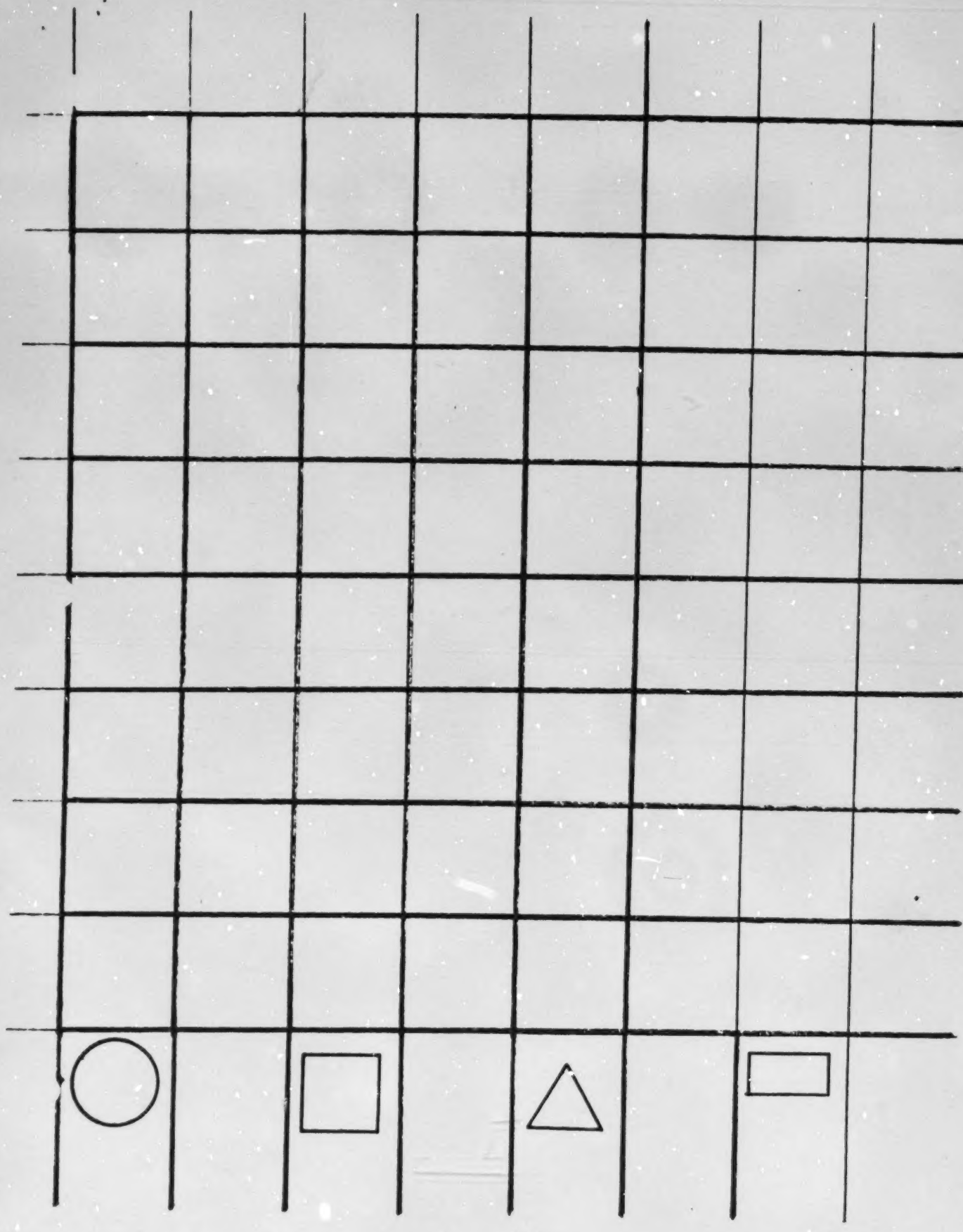
For Task A in the measuring activities the students will need ample 2 centimeter strips, 4 centimeter strips, and 8 centimeter strips. In Task B the students will need 3 centimeter strips, 6 centimeter strips, and 9 centimeter strips in various colors indicated.

For the last activities the students need five strings equal in length to the perimeter of the shapes on the accompanying sheet. A centimeter ruler or tape should also be included.

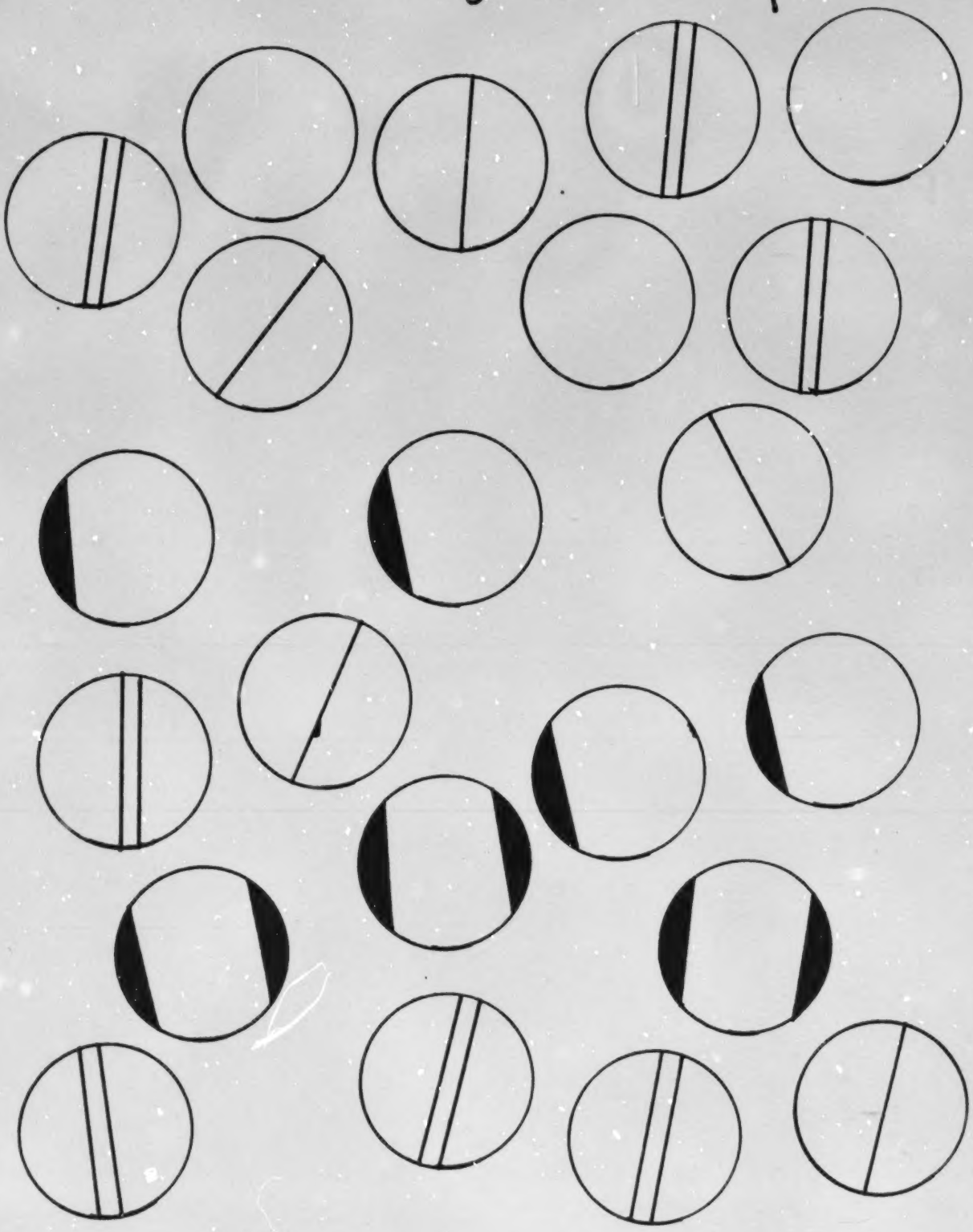
Make a graph.

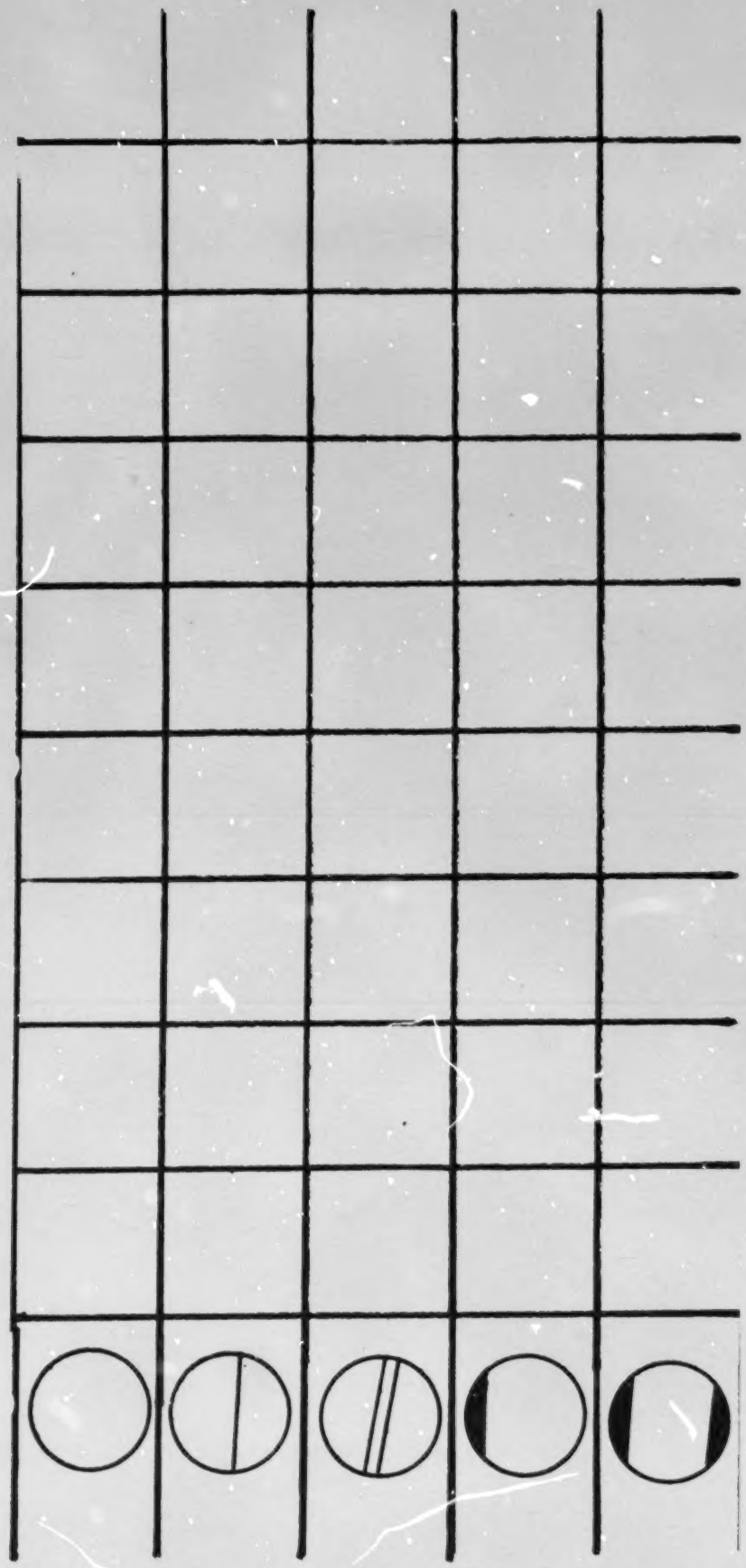
Count the circles. Graph them. Do the same for the other shapes.





Make a graph.
Count the figures. Graph them.



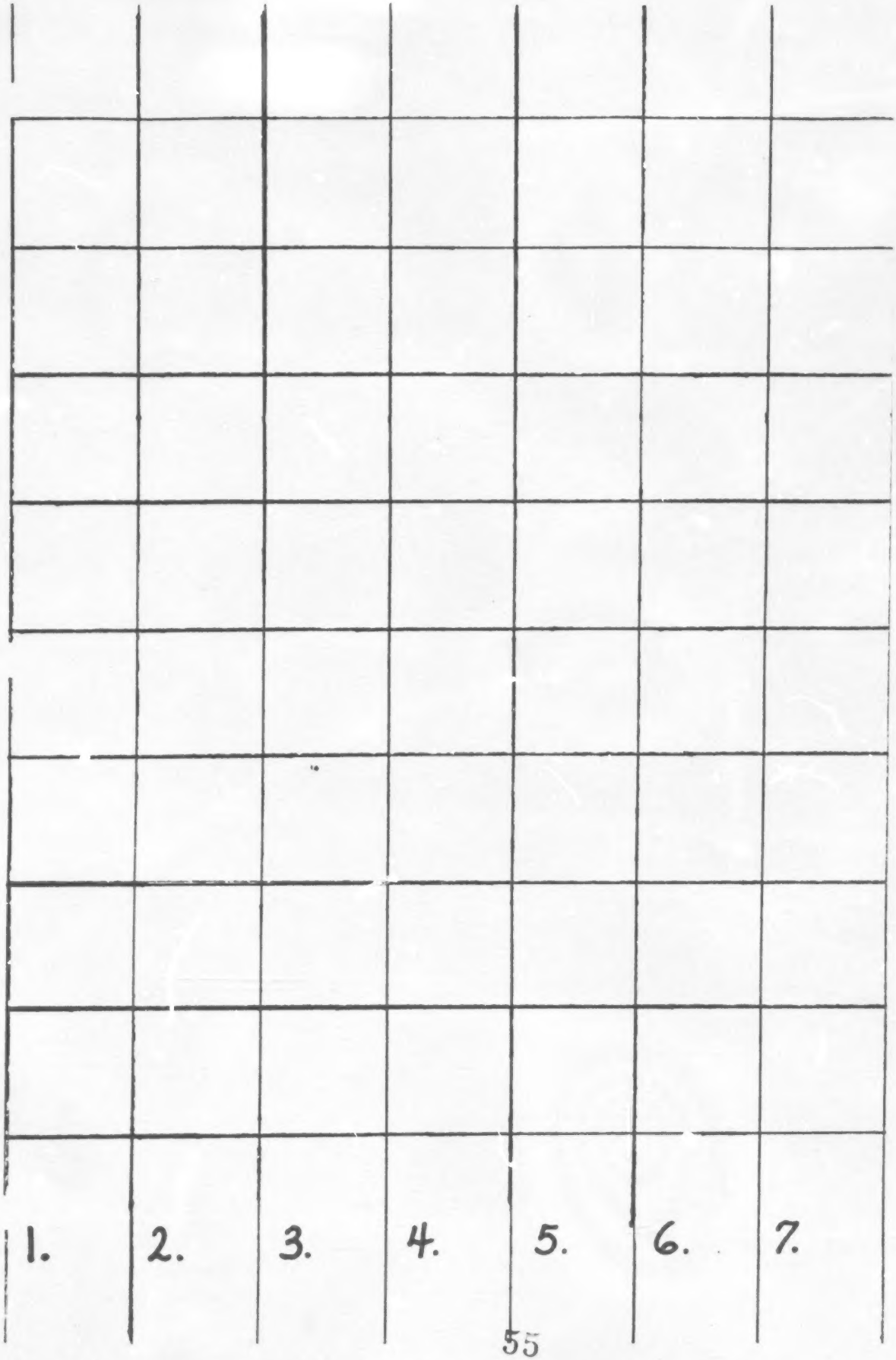


STAR SEARCH

HOW MANY ★S ARE THERE?

_____ 1) IN THE CIRCLE, BUT NOT IN THE SQUARE OR TRIANGLE?
_____ 2) IN THE SQUARE, BUT NOT IN THE TRIANGLE OR CIRCLE?
_____ 3) COMMON TO THE TRIANGLE AND CIRCLE, BUT NOT THE SQUARE?
_____ 4) COMMON TO THE SQUARE AND CIRCLE, BUT NOT THE TRIANGLE?
_____ 5) IN THE TRIANGLE, BUT NOT IN THE SQUARE OR CIRCLE?
_____ 6) COMMON TO THE TRIANGLE AND SQUARE, BUT NOT THE CIRCLE?
_____ 7) COMMON TO THE CIRCLE, SQUARE AND TRIANGLE?

Make a graph.


1.
2.
3.
4.
5.
6.
7.

What Is In The Grab Bag?

Task A:

Reach into the bag.
Remove a shape.
Color in area on graph.
Graph all the shapes from the bag.

Task B:

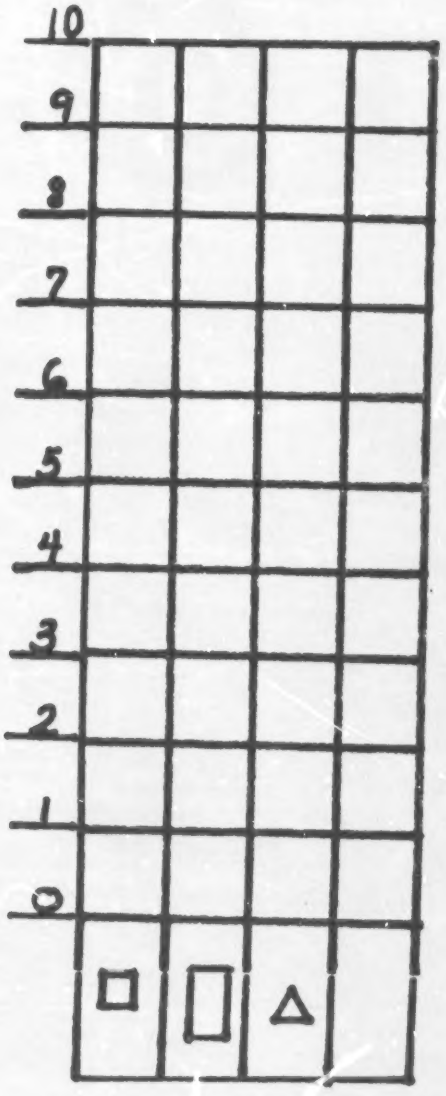
How many?

Squares? ____

Rectangles? ____

Triangles? ____

How many in all? ____



Can You Predict?

20 items in the bag

Task A:

Use an answer sheet.

Try 10 times.

Reach into the bag. Tally.

Put shape back in bag each time.

Task B:

Make a prediction.

Remember - the total is 20.

Task C:

Reach into the bag. Do not put items back this time.

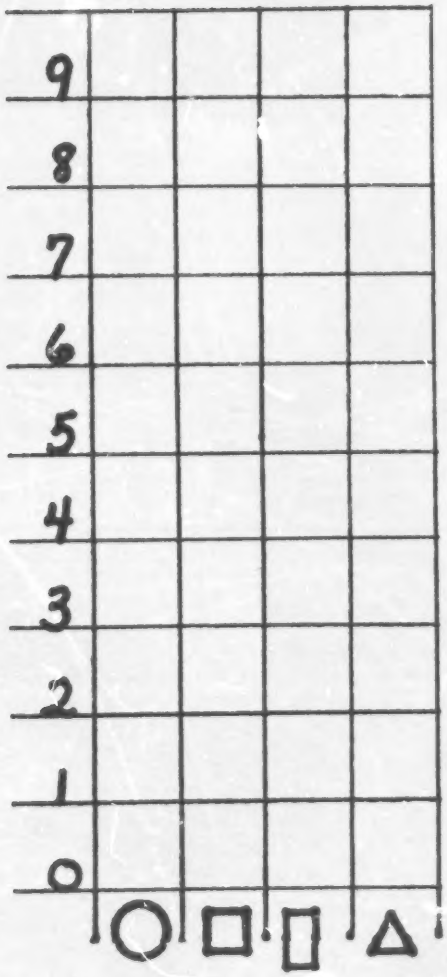
Graph the results.

Task D:

Finish the answer sheet.

Put the sheet in your box.

Task C:



Name _____

Task A:
Tally

Circle
Square
Rectangle
Triangle

Task B:

I predict:

Circle
Square
Rectangle
Triangle

Task D:

How
Many?

Circle
Square
Rectangle
Triangle

Make A Prediction

Directions:

Use an answer sheet.

Task A:

Try 10 times.

Flip the tokens. Tally "Heads" each time.

Task B:

What do you predict for 20 flips?

Task C: Flip the tokens 20 times. Tally.

Put the sheet in your box.

Name _____

Task A:

How many "Heads" do I see?	
	0
	1
	2

Task B:
I predict for 20 flips.

	0
	1
	2

Task C:
The result.

	0
	1
	2

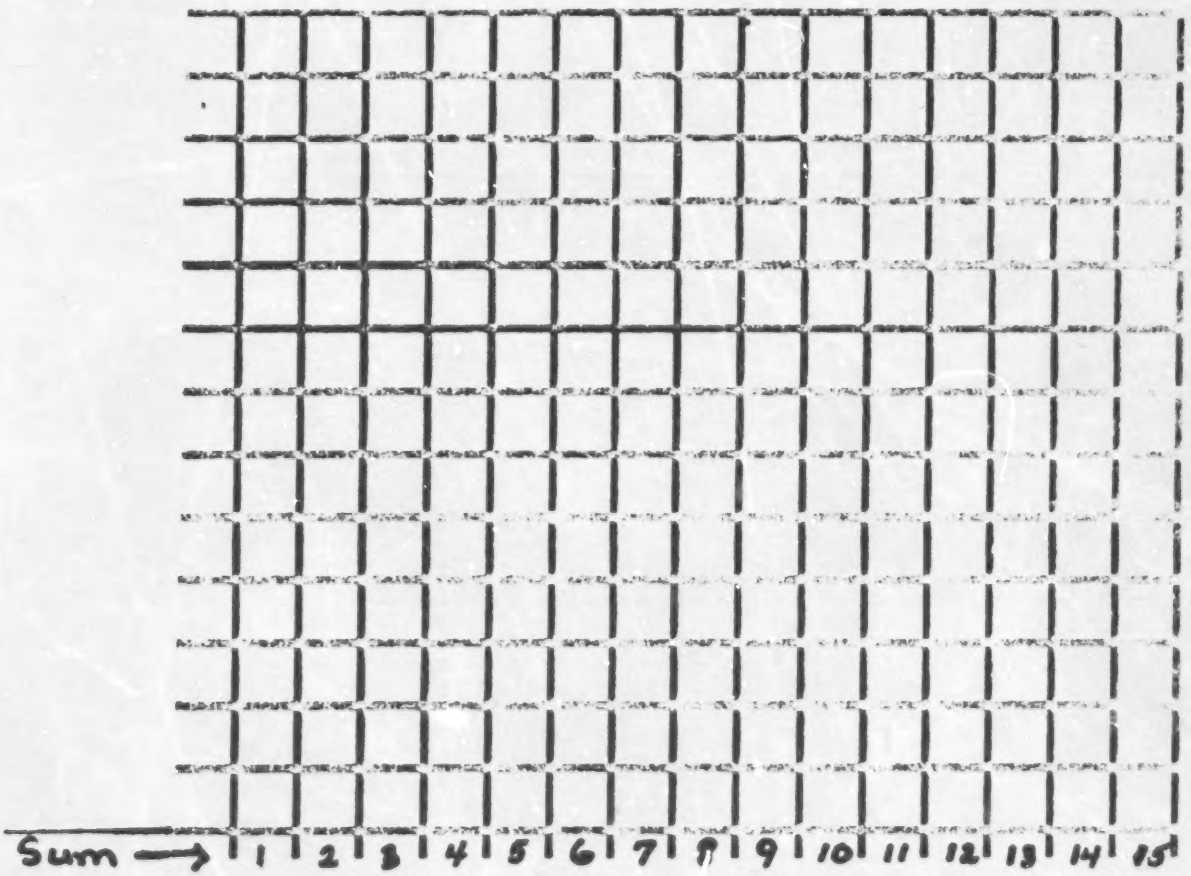
Graph The Sums

Directions:

Task A: Fill in answers on sheet.

Task B: Roll the dice 20 times.
X a square on the graph for each roll.

Task C: Finish the answer sheet.
Put the sheet in your box.



Name _____

Task A:

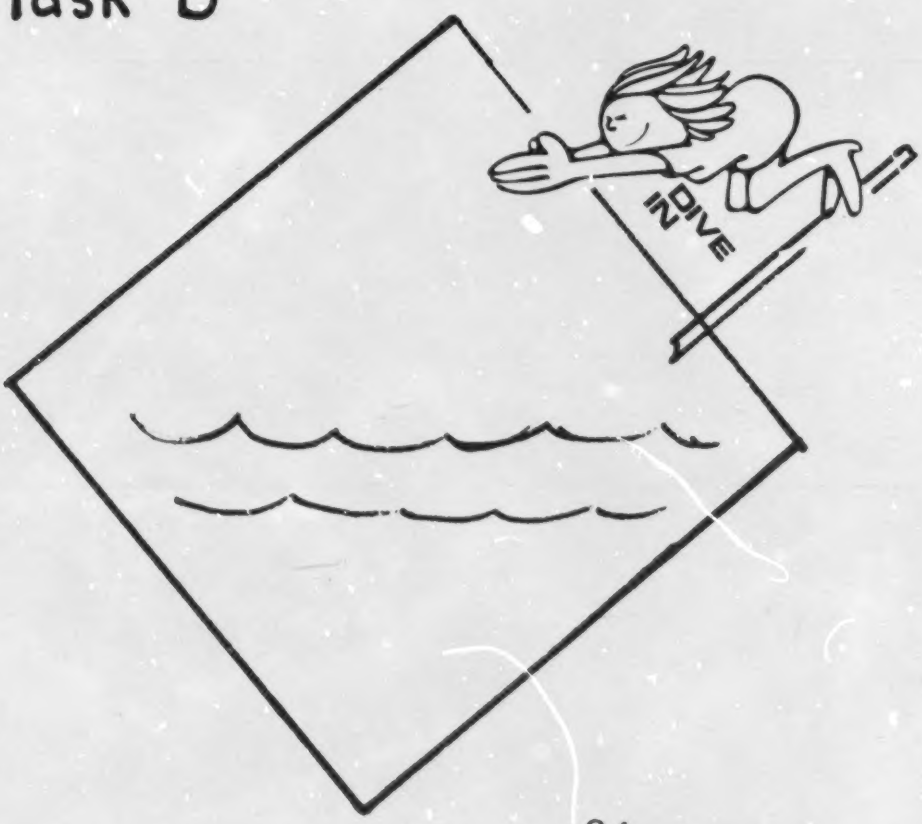
- What is the smallest sum that can be rolled? _____
- What is the largest sum that can be rolled? _____
- What sum will come up most often? _____

Task C:

- What sum did you roll most often? _____
- What sum did you roll least often? _____

Task A

Task B



Name _____

Measure:

Task A:

How many strips to go around the cage?

Red strips? ___

Blue strips? ___

Yellow strips? ___

Task B:

How many strips to go around the pool?

Green strips? ___

White strips? ___

Brown strips? ___

Name _____

Measure Metric

Directions:
- Match each string to a figure.
- Measure the string.

How many centimeters?

Figure A___ Figure B___

Figure C___ Figure D___ Figure E___

Name _____

Measure Me!

How many centimeters?

My little finger?___ My nose?___

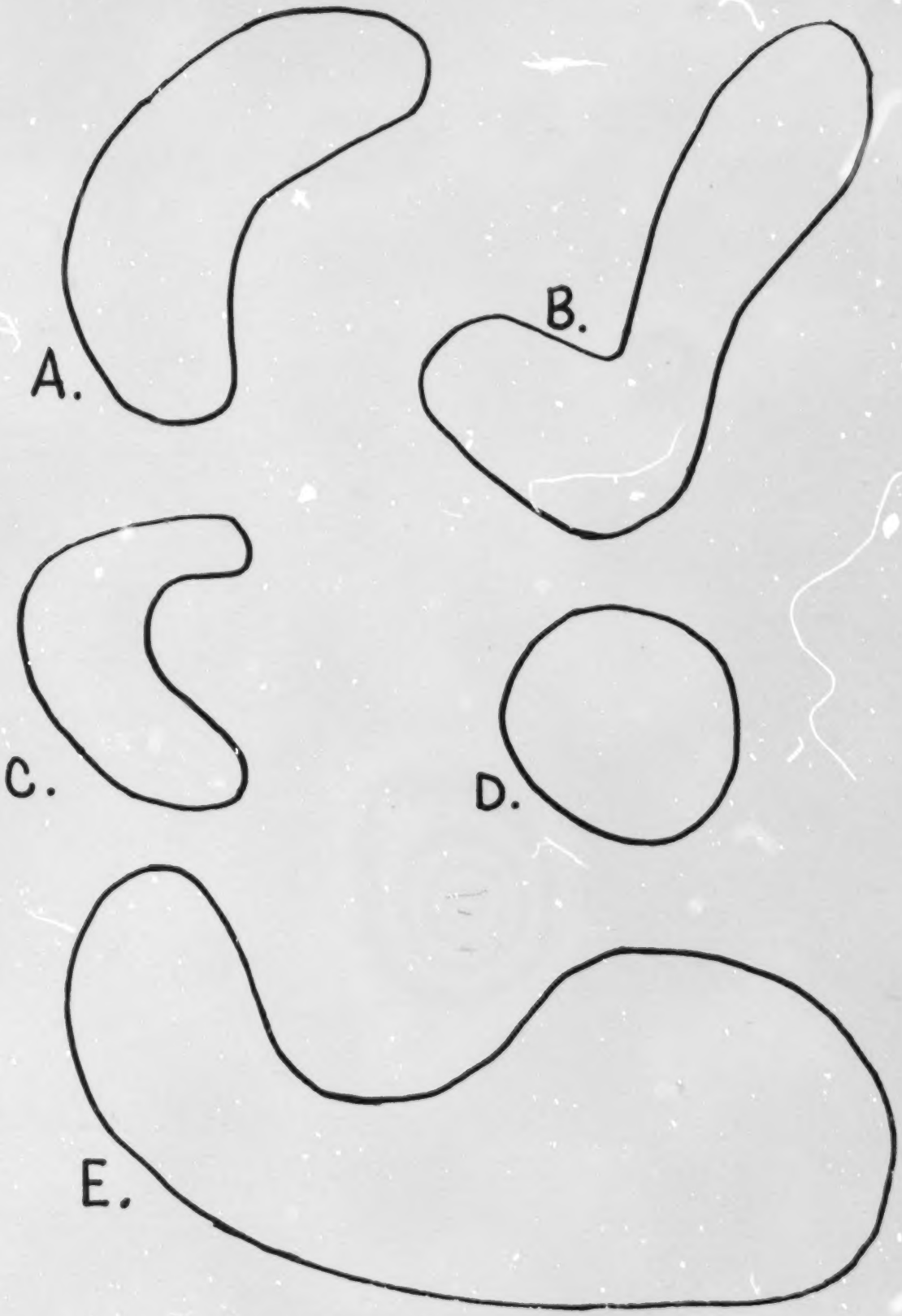
Longest fingernail?___ Elbow to wrist?___

How long is my hand?___ My foot?___

Around my ankle?___ My waist?___

Around my wrist?___ My head?___

Around my knee?___ My desk?___


A.
B.
C.
D.
E.